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The YOUNG MAN'S COMPANION;

OR,

SELF INSTRUCTOR.

FISHER, SON & Cº LONDON 1834

THE

SELF-INSTRUCTOR,

OR

YOUNG MAN'S COMPANION:

BEING

AN INTRODUCTION TO ALL THE VARIOUS BRANCHES OF USEFUL LEARNING AND KNOWLEDGE.

Containing Writing, Grammar, Arithmetic, Astronomy, Geography, Chronology, and Miscellaneous Articles.

To which is added,

THE ARTIST'S ASSISTANT;

COMPRISING THE ARTS OF DRAWING, PERSPECTIVE, ETCHING, ENGRAVING MEZZOTINTO SCRAPING, PAINTING, DYEING, COLOURING OF MAPS, ETC. A BRIEF ACCOUNT OF NAVAL AND MILITARY AFFAIRS; AND VARIOUS USEFUL MEDICINAL RECEIPTS.

A NEW AND IMPROVED EDITION.

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PREFACE.

TO take up time in convincing our readers of the great Utility of a Work of this nature, would be wholly unnecessary; it being a truth sufficiently obvious, that a judicious SELECTION, properly arranged, is the most eligible way to lead the inquiring Youth from the first Rudiments of Language to the delightful exercises of more advanced attainments.

Here the Reader will find, compressed within the narrow compass of a single Octavo Volume, subjects which, in their original Works, were diffused through the tedious pages of large and elaborate Treatises. Indeed to such works, entrenched, it may be, with profound literature and abstruse terms of science, the juvenile capacity is seldom found equal. Their formidable appearance alone dismays, and their real difficulties prove so insurmountable, that Genius and Emulation, even when united, too often return vanquished from the encounter.

We shall not here enter into a recapitulation of all the various Branches of Useful Knowledge which will be found in the SELF-INSTRUCTOR; suffice it to say, that under one head at least, viz. Geography, we have given a more copious and systematic description than

is to be found in any similar Work of the same extent. We have been led to this, by the consideration, that after the attainment of a competent knowledge of other introductory matters, an acquaintance with the World becomes indispensably necessary ; and this can only be acquired by the study of Geography. By this pleasing science, Youth may not only become acquainted with the Situations, Magnitudes, and Boundaries, of Empires, Kingdoms, and States, but with their Climates, Soils, and other particulars relating to them. By the help it affords, the Historian reads with double profit ; and the Politician, by being acquainted with the situation of various places, peruses the daily vehicles of intelligence with greater interest and delight.

We submit the Work, such as it is, to the judgment of the Reader ; hoping that its Contents will at least, if attentively improved, lay a foundation for a fund of Knowledge, the acquisition of which may prove a source of secret satisfaction to the possessor, and contribute to render him an agreeable and useful Member of Society.

THE

SELF-INSTRUCTOR;

OR,

YOUNG MAN'S COMPANION.

GRAMMAR.

The Use of LETTERS; *the Distinction between Vowels and Consonants; Diphthongs, their Number, and how pronounced and written.*

THE design of this Book being to instruct mankind, especially those who are young, in the methods of conversing and transacting business in the world; therefore, that most necessary accomplishment of spelling and writing good and proper English claims the first notice: for let a person write ever so good a hand, yet if he be defective in spelling, he will be ridiculed, and contemptibly smiled at, because his writing fair will render his orthographical faults more conspicuous. Therefore,

First, Observe, that of Letters are made Syllables, of Syllables Words, and of Words Sentences, &c.

There are twenty-six Letters in the English Alphabet; which are as follow, with their names and powers of sound:

ROMAN CHARACTERS.

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
a b c d e f g h i j k l m n o p q r s t u v w x y z

ITALIC.

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
a b c d e f g h i j k l m n o p q r s t u v w x y z

ENGLISH.

𝔄 𝔅 ℭ 𝔇 𝔈 𝔉 𝔊 ℌ ℑ 𝔍 𝔎 𝔏 𝔐 𝔑 𝔒 𝔓 𝔔 ℜ
𝔖 𝔗 𝔘 𝔙 𝔚 𝔛 𝔜 ℨ
𝔞 𝔟 𝔠 𝔡 𝔢 𝔣 𝔤 𝔥 𝔦 𝔧 𝔨 𝔩 𝔪 𝔫 𝔬 𝔭 𝔮 𝔯 𝔰 𝔱 𝔲 𝔳 𝔴 𝔵 𝔶 𝔷

SOUND OF EACH LETTER.

A as *a*, b *bee*, c *cee*, d *dee*, e *e*, f *eff*, g *gee*, h *aitch*, i *i*, j *ja*, k *kay*, l *ell*, m *em*, n *en*, o *o*, p *pee*, q *ku*, r *ar*, s *ess*, t *tee*, u *u*, v *vee*, w *double-u*, x *eks*, y *wi*, z *zed*.

In these Letters, we are to observe their names, their form, and their force. Their names, whereby to know them; their form, whether great or small; and their force, in pronunciation or utterance.

Letters are distinguished according to their sound into Vowels and Consonants: A vowel is a letter that sounds by itself. They are *a, e, i, o, u,* and sometimes *w* and *y*. *W* and *y* are consonants when they begin a word or syllable; but in every other situation they are vowels. A consonant is a letter that sounds not, except it be joined with a vowel, for without one of the vowels no syllable can be made; as *b, c, d,* &c. without the aid of a vowel, cannot be sounded. Though we have twenty-six letters, and seven of them *vowels*, yet we have twenty-two *consonants:* for *w* and *y*, when set before vowels, in the same syllable, become consonants; as in *wonder, beware, youth, beyond,* &c. Note, That *j* has the sound of *g*, as in *join, jangle, jingle,* &c.

When two vowels come or meet together in a syllable, and are not parted in the pronunciation, but united in one sound, they are called *Diphthongs;* of these there are thirteen, viz. *ai, ei, oi, ui, au, eu, ou, ee, oo, ea, eu, oa,* and *ie;* as in *maid, faith, either, join, aul, eunuch, stout, feed, seed, food, brood, stealth, wealth, people, steeple, boat, goat, heat, beat, feet, feat, friend, field,* &c. Note, That in the first seven words both vowels are sounded; but in the other sixteen, one of them is scarcely heard; the former are called *proper*, the latter *improper* diphthongs.

Where three vowels meet in one sound, they are called *Triphthongs;* as in *beauty, beau, lieu,* and *quaint.* Note, *aw, ew,* and *ow,* are commonly sounded as *au, eu,* and *ou.*

Observations concerning the SOUND *of* LETTERS, *and which are omitted in Pronunciation.*

A is not sounded in *Pharaoh,* but as if written *Pharo;* neither in *marriage,* but as *marrige;* also *parliament,* as *parliment,* and *chaplain,* as, *chaplin,* &c. In some proper names it is not sounded, but dropt in the pronunciation; as in *Aaron, Isaac, Canaan, Balaam;* which are pronounced as if written *Aron, Isac, Canan, Balam;* but we must except *Ba-al* and *Ga-al. A* is sounded broad, like *aw,* in words before *ld* and *ll;* as in *bald, scald, ball, wall, fall.*

B is not sounded in *thumb, dumb, plumb, lamb, doubt, debt, subtle,* &c. but sounded as if written, *thum, dum plum, lam, dout, det, suttle,* &c.

C is sounded hard like *K*, before *a*, *o*, and *u*, and before *l* and *r*; as in these words, *cane, came, comb, cub, clay, crane, crab*; and soft in *cement, city*, and *tendency*. *C* loses its sound in *scene, science, victuals*, and *verdict*; likewise in *indict, indictment*; also before *k*, as in *stack, rack, stick, thick, brick*. In some words of Greek and Hebrew derivation, *C* is sounded like *K*, as in *sceptic*, &c.

Ch is sounded like *K* in many foreign words, some of which occur in the holy scripture; as in *chorus, chymist, Chrysostom, Christ, Chedorlaomer, Baruch, Archippus*, &c. In the word *schism*, the sound of *ch* is lost, it being sounded as if written *sism*; and in the words *Rachael, cherubim*, and *archbishop*, it is sounded in the English manner. *Ch* in French words sounds like *sh*, as in *chevalier*, pronounced *shevalier; machine, masheen; mareschal, marshal; capuchin, capusheen; chaise, shaise*, &c.

D is not sounded in *ribband*, nor in *Wednesday*, which are pronounced *ribbon*, and *Wensday*; the termination *ed* is often shortened into *t*; as *burned, burnt; passed, past*, &c.

E is not sounded in *earth*, neither in *hearth*, nor *dearth*, &c. *E final* is that placed at the end of a word, and is seldom heard but in monosyllables, as in *me, he, she, ye, thee*, &c. where it has the sound of double *ee*. And in words derived from foreign languages, in which *e* has its perfect sound; as *Jesse, jubilee, Mamre, Nineve, Candace, Cloe, Penelope, Salome, Phebe, epitome, catastrophe, Gethsemane, simile, premonire*, &c. In all other cases *E final* serves only to lengthen the sound, and to distinguish it from other words of different meaning, which are written without *e*, and are sounded short; as in these examples following, viz. *cane, can; hate, hat; bite, bit; fare, far; hope, hop; made, mad; mane, man; scrape, scrap; stare, star; tune, tun; write, writ*, &c. In words of more than one syllable, it lengthens the sound of the last syllable, but does not increase the number of syllables; as *admire, demise, blaspheme*, &c. *E* lengthens the syllable also in some foreign words, such as *Eve, Tyre, Crete, ode, scheme, dialogue, Kenite*, and *Shulamite*. *E* is seldom written after two consonants; as in *pass, turn, black*; not *passe, turne, blacke*. Yet after *rs* it is used, as *horse, nurse, purse*; not *hors, nurs, purs*. Also the words ending in *cre, gre*, and *tre*, sound the *e* before the *r*, as in these words: *acre, lucre, centre, sepulchre, tygre, maugre, mitre, lustre*; which are sounded as if written *aker, luker, center, sepulker, tyger, mauger, miter*, and *luster*. *E final* also serves to soften *c* and *g*, as in *ace, place, lace, spice, truce, oblige, huge, age*, &c. If nouns in *E final* take *s* after them with an apostrophe before it, it stands for *his*, as the *pope's eye*, or the *eye of the pope*; the *table's foot*, or the *foot of the table*. If without an apostrophe, it makes the plural number, as *popes tables*. Words derived from those written with *E final*, seldom retain it, as in

writing, loving, doing, &c. not *writeing, loveing,* or *doeing;* except in the termination *ge* and *ce* before *able,* as in *changeable, peaceable,* &c. *E* should not be written after a diphthong in these words: *vain, main, gain, fear, know,* &c. not *vaine, maine, gaine,* &c. *E final* is annexed, but not sounded, in those words which would otherwise end with *i, o,* or *u;* as in *die, foe, sloe, true, virtue,* &c. but there are some exceptions, as *do, so, to,* &c.

Lastly, There are some words in which the *final E* does not lengthen the sound; as *give, live, some, one, done,* &c.

F in plurals is changed into *v;* as *wife, wives; staff, staves.*

G is not sounded in *sign, reign, gnaw, gnat, assign, design, seignior, seraglio, phlegm,* &c. *G* is sounded soft in *gender, ginger,* and *gipsey;* but hard in *Gibeon, Giberah, Gilboa, Geth-se-ma-ne;* and hard also in these proper names, *Gibson, Gilman, Gilbert;* and also in these common words, *gelt, geld, girt, gimp, geese, gander, gamble, garter, gather, gild,* &c. Observe, That if *G* be hard with a long vowel, *ue* is joined and pronounced in the same syllable; as in *plague, Prague, Hague, rogue, league, dialogue, catalogue,* &c.

Gh in the end of some words, where *au* or *ou* goes before, has the sound of *ff,* as in *tough, rough, cough, laugh,* sounded as if *tuff, ruff, coff, laff;* but *buff, cuff, snuff,* and *huff,* must be so written. *Gh* is not sounded in *mighty, though, through, daughter,* and *Vaughan.*

H has place, but no sound, in *chronicle, Christ, ghost, John, Rhine, schism,* &c. *H* is not sounded at the end of words if it be alone, as *Sarah,* but with *tc* before it it is sounded, as *snatch, watch,* &c.

I is not sounded in *adieu, juice, venison, fruit, bruise, Salisbury:* it is sounded like *ee* in *oblige, magazine, machine,* &c. *I* is sounded long in proper names ending in *iah,* as *Jeremiah, Hezekiah;* but short in *Ariel* and *Miriam.* *I* is sounded like *u* in *first, dirt, bird,* &c.

K is nearly allied in sound to *C;* but to know when to use one, and when the other, note, that *C* has the force of *K* only before *a, o, oo,* and *u,* and these two consonants *l* and *r:* and therefore we must not write *kare* for *care, kow* for *cow, krown* for *crown.* And the use of *K* is only before *e, i,* and *u;* wherefore we must write *keep, key, knight, kill,* &c. not *ceep, cey, cnight,* nor *cill.* But the words *calender,* and *Catharine,* are written sometimes *kalendar,* and *Katharine.* *K* is written after *c* only in pure English words, such as *beck, deck sick,* &c. for the best authors have omitted it in words derived from the Greek and Latin, such as *public, music, physic,* &c.

L is not sounded in *calf, half, chalk, stalk, walk,* those words being pronounced as if written *caff, haff, chauk, stauk, wauk.*— Neither is *l* sounded in *Holborn, Lincoln, salmon,* nor *chauldron,* these are sounded as if written *Hoborn, Lincon, sammon,*

and *chaudron*; nor in *colonel*, where the first *l* has the sound of *r*, as *cornel*.

M has an unvaried sound; as in *man, men, mine, moan, more*, &c. if either *b* or *n* follow it, at the end of a word, the sound of *b* or *n* is lost, as *lamb, hymn*.

N is not heard in *autumn, lime-kiln, solemn, limn, hymn, column*, and *condemn*.

O is not sounded in *people, feoffe, bason, mutton, yeoman, mason, righteous, bacon, jeopardy, crimson*. *O* is sometimes sounded like *i*; as in *women*, pronounced *wimmen*. And sometimes *O* is sounded as *u*; as in *money, conduit, conjure, attorney, Monmouth*, &c. being heard as if written *munney, cunduit, cunjure, atturney, Munmouth*, and it is sounded like *oo* in *do, prove, move*, &c. *O* has a long sound; as in *note, bore*; and a short sound; as in *not, lot*.

P is written, but not sounded, in *empty, presumptuous, psalm, sumpter, attempt, psalter*, and *symptom*; also in *sumptuous, contemptuous, receipt*, and *consumptive*, &c.

Ph has the sound of *f*, when together in one syllable; as in *philosophy, physician, Asaph*, and *elephant*; but we must not write *filosophy, fisician, Asaf*, or *elefant*: *Ph* are parted in *shepherd, up-held*, and in *Clap-ham*, and other such compound words.

After *Q* always follow *u* in all words; and in some French and Latin words they have the sound of *k*; as *risque, liquor, catholique, banquet, conquer, masquerade, chequer*; pronounced as *risk, likker, catholik, banket*, &c. to which, add *oblique, relique, antique*, &c. which are sounded as if written *oblike, relike, antike*, &c.

S is not sounded in *island, viscount, isle*, and *Lisle*; which are pronounced as if wrote *iland, vicount, ile*, and *Lile*.

S at the end of words sounds hard like *z* in words of the plural number, and in words of the third person; as *names, words, he reads, she hears*. *S* sounds hard in some words that terminate in *sion*, as in *circumcision, evasion, delusion*; but after a consonant soft, as in *conversion, commission, dimension*. *S* is likewise sounded hard in these words, *raise, praise, chaise, cheese, these, compose, expose bruise, refuse, applause, clause, wisdom, casement*, and *damsel*.

Th sounds fine in *thin, think*, and *wrath*; and is sounded hard in *thee, then, they, that, blithe, tithe*, and *scythe*; also in *mother, brother, hither, thither*; and in *lothe, clothe*, and *clothier*, &c.

Ti before a vowel or a diphthong, has the sound of *si* or *sh*; as in *patience, dictionary, Grecian, oblation, nation, translation*; except when *s* goes just before it, as in these words, *question, fustian, bastion, combustion, celestial*, and *bestial*, &c. But in some words of Hebrew and Greek, it retains its natural sound, as in *Shealtiel, Phaltiel, Sepatiah, Cotittia, Adrymitium*, and the like; and in the English derivatives *mightier*, and *mightiest, emptiest, emptied, pitiable*, &c.

U is sounded like *i* in *bury, birry; busy, bizzy; business,* as *bizziness.* *U* is sometimes written after *g* without being sounded, as in *guide, guard,* &c. It is also silent in the words, *buy, built, conduit, circuit, labour, favour, honour,* &c. but it is sounded in others, as *anguish, languish, Montague,* &c.

V is placed before no other consonant, but before all the vowels in general; as in *vale, vest, vice, voice, vulture,* &c. and bears a very near affinity to the letters *f* and *ph.*

W is not sounded in *answer, sword, swoon,* &c. neither is it heard before *r* in *wrap, wrath, wrong, wretch, wrangle, wriggle, wrestle,* &c.

Wh belongs to words purely English; as *what, when, where,* and *wheel.*

X is sounded as *z* in *Xenophon, Xerxes, Xenocrates,* and *Xantippe.*

Y is either a Vowel or Consonant, as hinted before: A Vowel in *my, by, fly, thy;* and sometimes, when a Vowel, it has the sound of *ee,* as in *worthily, christianity, liberty, formerly, formally, Normandy,* and *Dorothy.* In derivative English words, having the termination *ing, y* is used in the middle of the word, as in *buying, dying, burying, marrying,* &c.

Z is a double consonant, and contains in it the sound of *ds,* or rather *s* hard. It begins very few words, except what are derived from foreign languages; as *zany, zest, zeal, zone, zodiac,* and *zenith.*

The diphthongs *ai* and *ay,* have the sound of *a* in *air, fair, pair, may, stay, play;* but *a* is lost in *Calais,* a town in France.

Ei and *ey* are sounded like *a* in *eight, streight, neighbour, heir, veil,* and *convey;* like *e* in *key;* and like *i* in *sleight.*

Oi and *oy* have a sound peculiar to themselves; as in *oil,* and *oyster;* but make no Diphthong in the derivatives *going, doing,* &c.

Au and *aw* commonly keep a proper sound, as in *augur, austere, daw, maw, saw,* &c. but *u* is lost in *aunt* and *gauger,* being sounded as *ant* and *gager;* they make no diphthong in *Em-ma-us* and *Ca-per-na-um.*

Eu and *ew* have a united sound in most words, as in *feud, brew, new,* and *grew;* but *eu* is no diphthong in *Zac-che-us* and *Bar-ti-me-us.*

Ou is expressed in *foul, soul, proud, loud;* and *ow* in *how, cow,* and *now;* but *ou* sounds like *oo* in *soup* (a French dish,) and *Cowper* (a man's name,) which are sounded as if *soop,* and *Cooper.*

Ee is no diphthong in *Be-e-rites, Be-er-she-ba,* and *Beel-ze-bub;* nor in words beginning with *re,* or *pre;* as *re-en-ter, pre-em-i-nence,* &c.

Oo is properly sounded in *cool, fool, pool, root,* and *tool,* but has the sound of *u* in *foot* and *soot;* it makes no diphthong in *Co-os,* or *co-o-pe-rate.*

Ea sounds like *e* in *sea, pea, ream, seam, bread, lead, dead,*

dead, leather, feather, heaven, leaven, and *creature:* it is no diphthong in *ven-ge-ance, mis-cre-ant,* or any Hebrew, Greek, or Latin words: as in *Kad-esh Bar-ne-a, Kir-jath-je-a-rim;* nor in *Ce-sa-re-a, i-de-a, o-ce-an, re-al, be-a-ti-tude, cre-a-tor;* nor in words beginning with *pre,* as *pre-am-ble,* &c.

Eo is no diphthong in *dun-ge-on, hi-de-ous, me-te-or, pi-ge-on, the-o-ry,* &c.

Oa is sounded as *o,* in *goat, boat,* and *coat;* it is sounded broad, as *au,* in *broad* and *groat;* but is no diphthong in *Go-a,* (a city in India,) or in the Hebrew words *Zo-an, Zo-ar, Gil-bo-a.*

Ie before a single consonant sounds like *ee,* as in *brief, chief,* and *thief;* but if before two consonants, it sounds like *e,* as in *friend, field;* but at the end of English words the *e* is not heard, as in *die,* or *lie;* it is no diphthong in *A-bi-e-zer, E-li-e-zar,* nor in the English words *di-er, car-ri-er, clo-thi-er;* nor in words derived from the Latin, as *cli-ent, o-ri-ent, qui-et,* and *sci-ence.*

Ui is sounded like *u* in *juice, fruit,* and *suit;* but *u* is lost in *conduit, built,* and *guise;* and is no diphthong in *je-su-it, ge-nu-ine,* and *fru-i-ti-on.*

Æ and *Œ* are not English diphthongs; they are used in *Æsop, Æneas, Ætna, Cæsar, Œdipus,* and sound like *e;* but in common words they are neglected, as in *equity, female,* and *tragedy,* though derived of *æquitas, fœmina,* and *tragœdia.*

Of Syllables *and* Spelling.

A Syllable is either one letter, as *a;* or more than one, as *man.*

All spelling, or division of syllables, may be comprehended in seven general rules.

1. A consonant between two vowels, goes to the latter syllable; as ba-nish, except *w* and *x,* which go to the former syllable, as flow-er, ex-ile.

2. Two consonants in the middle of a word, that are proper to begin a word, must begin a syllable together; as fa-ble; except such derivatives, whose primitives ending in *e* final, drop the *e* in spelling, have the consonants in the middle of the word parted, though they may be proper to begin a word; as *hous-hold.*

Note. That *dl, tl,* and *kl,* are often used to begin syllables, though they begin no word; as *la-dle, tur-tle, wrin-kle.*

3. Two consonants in the middle of a word, that are not proper to begin a word, must be divided; as *num-ber,* except two consonants in the middle of a derivative, though they be not proper to begin a word, must not be divided; as *stand-ard.*

4. If two vowels come together, not making a diphthong, they must be divided; as *ae* in Ja-el; *ao* in ex-tra-or-di-na-ry; *eo* in pi-te-ous; *ia* in vi-al; *io* in vi-ol; *iu* in di-ur-nal; *oe* in co-er-ci-on; *ua* in u-su-al; *ue* in du-el; *ui* in ru-in; con-gru-i-ty; and *uo* in con-gru-ous.

Note. 1. *Ua, ue, ui,* and *uo,* become diphthongs after *q;* as

quar-rel, ques-tion, qui-et, quo-ti-ent; likewise *ua* in per-suade, per-sua-sion, &c.

2. Let words formed and derived be divided according to their original and primitive; and the consequence of this rule is, that these terminations, *-age, -ed, -en, -er, -est, -et, -eth, -ing, -ish, -ous, -ard, -al,* ought to go by themselves in spelling; as herb-age, boast-ed, gold-en, know-est, latch-et, hear-eth, bear-er, hear-ing, fool-ish, ru-in-ous, stand-ard, mo-nu-ment-al, ex-act-er; except monosyllables, and words accented upon the last syllable, ending in a single consonant without a diphthong foregoing, double their final consonant when they take any of the formative endings; and then it may be proper to put the latter consonant with the termination; as pot-tage, blot-ted, blot-test, blot-ting, blot-ter, rot-ten, slut-tish, a-bet-tor.

Another exception is, when words in *e* final take any of the terminations, *e* final is lost even in writing, and then a consonant may be put to the termination; as write, wri-test, wri-ter, wri-ting.

Note, 1. Where casting away the *e* would create any confusion in the sense, it is right to retain it; as from the verb *singe,* we should write singe-ing, to distinguish it from sing-ing, where words happen to be written on two different lines for want of room.

3. If words in *e* final have the last syllable short, it is a much better guide to the ear to let the termination go by itself; as for-giv-ing, for-giv-en, lov-er, com-ing.

4. Such primitives as take only *y* after them, have some of the foregoing consonants joined to it; as ear-thy: but after *u, w,* and *x,* it must come alone; as glu-y, dox-y.

5. A preposition, as *ad-, un-, in-, sub-, per-, dis-, re-, pre-,* must be pronounced by itself, as ad-e-quate, in-i-quity, un-e-qual, sub-urbs, per-ad-venture, dis-u-nite, pre-vi-ous; yet we say pe-ruse, instead of per-use.

The second consequence of this rule, is, *Beth* will be the first syllable in Beth-a-ny, Beth-el, Beth-aba-ra, Beth-es-da.

The third consequence of this rule is, the termination *ham* will go by itself at the end of a proper name; as Chat-ham, Fe-vers-ham, Buck-ing-ham, Elt-ham; except Sou-tham, and Wro-tham.

6. When three consonants meet in the middle of a word, if they can begin a word, and the preceding vowel be pronounced long, they are not to be separated; as de-throne, de-stroy; but when the vowel of the preceding syllable is pronounced short, one of the consonants always belongs to that syllable; as dis-tract, dis-prove, dis-train.

7. When three or four consonants, which are not proper to begin a syllable, meet between two vowels, such of them as can begin a syllable belong to the latter; the rest to the former syllable; as ab-stain, com-plete, em-broil, dan-dler, dap-ple, con-strain, hand-some, parch-ment.

A Diphthong is the union of two Vowels in one Syllable; as *ai* in laid.

A Triphthong is the union of three Vowels in one Syllable; as *ieu* in adieu.

Of Words.

Words consist of one or more syllables; the use of which is to convey the sense of things to another person, by joining them together in sentences.

Of Stops, Marks, *and* Points, *used in Reading and Writing; with their Places and Signification.*

These are of absolute necessity; and great regard ought to be had to them, to avoid confusion and misconstruction, and for the better understanding of what we read and write ourselves; and they are likewise of use to others who may hear us read, or see our writing. They teach us to observe proper distance of time, with the necessary raising and falling of the tone or voice in reading, and the needful stops or marks to be used in writing, that we may understand it ourselves, and that our meaning may not be misunderstood or misapplied by others.

Stops, or pauses, considered as intervals in reading, are no more than four: though there are other marks to be taken notice of, but to other purposes. The names of the four stops are, a *Comma, Semicolon, Colon,* and *Period* or *Full-stop;* and these bear to one another a kind of progressional proportion of time; for the comma signifies a stop of leisurely telling one, the semicolon two, the colon three, and the period four,—and are made or marked thus:

Comma (,) at the foot of a word.
Semicolon (;) a point over the Comma.
Colon (:) two points.
Period (.) a single point at the foot of a word.

(,) A *Comma* is used to separate those parts of a sentence, which, though closely connected in sense, require a pause between them. When several adjectives belong to the same substantive, they are distinguished by a comma; as, A well educated, sensible, and prudent, man. And when several substantives come together without a conjunction, they are separated by a comma; as, Faith, hope, charity.

(;) A *Semicolon* is used after a member of a sentence which requires a greater pause than a comma; and the pause must be double the duration of the comma; as, He lives in splendour proportioned to his fortune, without extravagance; and never yet has seen distress, without endeavouring to relieve it.

(:) A *Colon* is used after a sentence, which, though complete in itself, is still connected in sense with the following one; and requires a pause half as long as that of a period; as, A sound mind is not to be shaken with popular applause: but anger is startled at every accident.

(.) A *Period* is placed at the end of a sentence, which is so perfectly complete and independent, as not to be connected in construction, with the following sentence; and denotes a pause double the duration of the colon, with a total depression of the voice; as, Love and fear God. Be dutiful to your parents. Attend to your studies.

By the Examples foregoing, we may easily note, that a Comma is a note of a short stay between words in the sentence, and therefore the tenor of the voice must still be kept up. The Semicolon is a little longer, and the tone of the voice very little abated. The Colon signifies perfect sense, though not the end of the sentence; and the voice a little abated, or let fall. The Period denotes perfect sense, and the end of the sentence.

(?) When a question is asked, there is a crooked mark made over the period, thus ? which is called a Note of Interrogation. *Example:* What could be happier than the state of mankind, when people lived without either avarice or envy? The time of pause for this stop is the same with the Semicolon.

(!) If a sudden crying out, or wondering, be expressed, then this mark is made over the full-stop, thus ! and called a Note of Admiration, or Exclamation. *Example:* O the astonishing wonders that are in the elementary world!

( ) If one sentence be within another, of which it is no part, then it is placed between two semicircles or parenthesis, made thus ( ). *Example:* Pompey on the other side (that hardly ever spake in public without a blush) had a wonderful sweetness of nature. Again: Of Authors be sure to make use of the best, and (as I said before) to stick close to them. Once more: Honour thy father and mother, (which is the first commandment with promise,) that it may be well with thee. In reading a Parenthesis, the tone must be somewhat lower, as a thing or matter that comes in by the by, breaking in as it were on the main coherence of the period. The time is equal to a Comma, and ought to be read pretty quickly, lest it detain the ear too long from the sense of the more important matter.

(') *Apostrophe,* is a Comma at the head of letters, signifying some letter or letters left out for quicker pronunciation, as *I'll* for *I will, would'st* for *wouldest, shan't* for *shall not, ne'er* for *never, 'tis* for *it is, i' th'* for *in the, o'er* for *over.* Or to denote the genitive, or possessive case; as, my father's house, my uncle's wife, the ship's course, &c.

(') *Accent,* is placed over a Vowel, to denote that the stress or sound of pronunciation is on that syllable.

(˘) *Breve,* or crooked mark over a vowel, signifies it must be sounded short or quick.

(ʌ) *Caret* signifies something is wanting, and is placed underneath the line, just where any thing omitted by mistake or forgetfulness, &c. should be brought in.

(^) *Circumflex* is of the same shape with a Caret, but is placed over some vowel, to shew the syllable is long, as *Euphrâtes.*

(¨) *Diæresis,* or two points placed over two Vowels in a word to signify they are to be parted, being no diphthong, as *aërial.*

(-) *Hyphen,* or Note of Connection, is a straight line; which being set at the end of a line, shews that the syllables of that word are parted, and the remainder of it is at the beginning of the next line; and sometimes it is used in compound words, as Burnt-sacrifices, Heart-breaking, Soul-healing, Book-keeper, &c. *N. B.* That when you have not room to write the whole word at the end of a line, but are obliged to finish it at the beginning of the next, such words must be truly divided according to the rules of spelling; as, to re-strain, not res-train. When the hyphen is placed over a vowel, it is properly a dash, and signifies the omission of *m* or *n;* it is much used in old Latin authors, and sometimes in English, especially in law business. *Example:* It is very *comēdable* to write a good hand.

☞ *Index* is a note like a hand, pointing to something very remarkable.

* *Asterix,* or Star, directs to some mark in the margin, or at the foot of the page. Several of them together denote something defective or immodest in that passage of the author.

† *Obelisk* is a mark like a dagger, and refers to the margin, as the asterix: and in dictionaries it signifies the word to be obsolete, or old, and out of use.

¶ *Paragraph* denotes a division, comprehending several sentences under one head.

§ *Section* signifies the beginning of a new head or discourse, and is used in subdividing a chapter, or book, into lesser parts or proportions.

[ ] *Brackets,* or *Crotchets,* generally include a word or sentence, explanatory of what went before; or words of the same sense, which may be used in their stead.

(" ") *Quotation,* or double Comma reversed, is used at the beginning of the line, and shews what is quoted from an author to be his own words, and two direct Commas are placed at the conclusion.

A careful attention to pointing, adds grace and credit to writing.

The USE *of* CAPITALS.

The first word of any writing should be begun by a capital letter; also the next word after a period. The pronoun *I,* and the

interjection *O!* must always be capitals. Every line in poetry must be begun by a capital. Proper names of persons and places, of titles and distinctions, should always begin with a capital letter: likewise all adjectives formed from proper names of places; as, *English, French, Italian, German,* &c. All names or epithets of Deity must be begun with a capital.

The first word of every sentence taken from an author, or introduced as spoken by another; and all words of particular importance; as, the *Restoration,* the *Revolution,* &c. must begin with a capital. Words may begin with capitals that are remarkably emphatical, or the principal subject of the composition.

Of Books.

Books are usually divided into *Chapters, Sections, Paragraphs,* and *Verses.*

Chapters contain the principal heads, subjects, or argument, of a book.

Sections are the largest divisions of a chapter, in which the particular arguments of that chapter are distinctly divided, and treated separately. Sections are distinguished by this mark (§).

Paragraphs are certain large members or divisions of a chapter or of a section; containing a perfect sense of the subject treated of, and calculated for the advantage of the reader: because at the end thereof, he may make a larger pause than usual at the end of a period. Paragraphs are distinguished thus (¶).

A Verse in prose is the shortest division in a chapter; as is largely exemplified in the Holy Bible; but in poetical writings it conveys to us an idea of a certain number of syllables artfully compacted in one line to gratify the ear.

Of Prosody.

Prosody teaches the true pronunciation of syllables and words, according to their proper quantities, and tones or accents.

Of Quantity.

The quantity of a word or syllable, is that by which we measure the time allowed for the pronunciation thereof; and is divided into short and long. The short quantity is known by a quick pronunciation; as, *not.* The long quantity is known by a slow pronunciation, or twice the time of a short quantity; as, *note.*

Of Analogy.

Analogy teaches us how to know distinctly all the several Parts of Speech in the English Tongue; which are eight, viz. Noun, Pronoun, Verb, Participle, Adverb, Conjunction, Preposition, and Interjection.

Of a Noun.

There are two kinds of Nouns, a Substantive, and an Adjective.

Of Substantives.

A Noun Substantive is the name of any being, or thing, per-

ceivable either by the senses or understanding; as, a *Horse*, a *Book*.

There are two kinds of Noun Substantives; proper and common.

A Substantive proper is the name of some particular person, creature, place, or thing; as, one man is called *Thomas*, another *John*; one horse is called *Jolly*, another *Whitefoot*; one ship is called the *Lion*, and another the *Sea-horse*; one place is called *London*, and another *Liverpool*.

A Substantive common is the name of every thing of the same kind and denomination; as, a *Man*, a *Dog*, a *Tree*.

There belong to a Noun these seven things; number, case, gender, person, article, declension, and comparison.

Of Number.

Number is the distinction of one from two, or more.

There are two Numbers, the singular and plural.

The singular number speaks but of one, as a *book*.

The plural number speaks of more than one, as *books*.

Some Nouns, such as the proper names of places, have no plural, as *London*, *York*, &c. as also *lime*, *slime*, &c. Others have no singular, as *ashes*, *bellows*, &c. and some few are used in both numbers, as *sheep*, *swine*, *deer*, &c.

Of Case.

There are six Cases in a Noun, singularly and plurally, viz. the nominative, the genitive, the dative, the accusative, the vocative, and the ablative. Though some now make only three cases, the *nominative*, the *possessive* and the *objective*; as, Nom. *A book*,—Poss. *A book's*, or *of a book*,—Obj. *A book*, &c.

Of Gender.

Gender is the difference of Nouns according to their sex.

There are three Genders; the masculine, the feminine, and the neuter.

Nouns of the masculine Gender, are of the male kind; as, a *father*, a *son*, a *horse*, a *lion*.

Nouns of the feminine gender, are of the female kind; as, a *mother*, a *daughter*, a *mare*, a *lioness*.

Nouns of the neuter Gender, are neither of the male nor female kind; as, a *stick*, or a *stone*.

There are some Nouns common to both sexes, which are called Epicenes; as, a *sparrow*, a *servant*, a *cat*, a *rabbit*.

Sex or Gender is distinguished by the help of some other distinguishing words; as, a *cock-sparrow*, a *hen-sparrow*, a *man-servant*, a *maid-servant*, a *he-cat*, a *she-cat*, a *male-rabbit*, a *female-rabbit*.

Note, There are some words which, though they are of the neuter gender, are often (by custom) used as if they were of the masculine or feminine gender. For thus we say of the sun, His going forth is from the end of the heaven, and his circuit unto the ends of it. And of the Church we say, She has nourished her children, but they have rebelled against her.

Of PERSON.

There are three Persons in both numbers; the first, who is always the person that speaks; the second, who is always the person or thing spoken to; the third, who is always the person or thing spoken of. *Example,* Sing. 1, *I:* 2, *thou,* or *you:* 3, *he, she, it, this,* and *that.* Plural, 1, *we:* 2, *ye,* or *you:* 3, *they, these,* and *those.*

Note, That all Nouns are of the third person, when spoken of, and the second when spoken to.

Of the ARTICLES.

An Article is a word set before a Substantive, for the clearer and more particular expressing its case and signification.

There are two Articles; *a* or *an,* and *the.* *A* or *an* is used in a general and unlimited sense; as, *a* man (that is any man) shall be commended according to his wisdom. *An* organ (that is any organ) is the best of all musical instruments.

Note, *A* is used before a consonant, *an* before a vowel.

The is used to convey a certain idea of that thing or person spoken of; as, *the* man (or this very man) who teaches the art of true spelling, has done much good.

Note, Substantives proper have naturally no Article set before them, except when some word is understood; as, The Thames, that is, The river Thames; The Tyne, that is, The river Tyne; or else when it is used by way of emmence, as, The God of the Hebrews.

Adjectives admit of an Article before them: but it is by virtue of some Substantive expressed or understood; as, *A* good Servant generally makes *a* good Master. They gathered *the* good Fishes into vessels, but cast *the* bad away.

Of the DECLENSION *of a* NOUN.

Declension is the Variation of a Word by Cases. Thus:

Singular.	*Plural.*
Nom. A Book,	Nom. Books.
Gen. Of a Book,	Gen. Of Books.
Dat. To a Book,	Dat. To Books.
Acc. The Book,	Acc. The Books.
Voc. O Book!	Voc. O Books!
Abl. From a Book,	Abl. From Books.

Singular.	*Plural.*
Nom. A Church,	Nom. Churches.
Gen. Of a Church,	Gen. Of Churches.
Dat. To a Church,	Dat. To Churches.
Acc. The Church,	Acc. The Churches.
Voc. O Church!	Voc. O Churches!
Abl. From a Church,	Abl. From Churches.

Note, All Nouns which make the plural number by the addition of *s,* or *es* to the singular, are regular; the others are irregular: as,

Singular.	*Plural.*
Nom. A man,	Nom. Men.
Gen. Of a Man,	Gen. Of Men.
Dat. To a Man,	Dat. To Men.
Acc. The Man,	Acc. The Men.
Voc. O Man!	Voc. O Men!
Abl. From a Man,	Abl. From Men.

Of Adjectives.

An Adjective is a word that expresses the quality or manner of a thing; as, *good, bad, great, small.*

An Adjective is to be placed before its Substantive; as, A *good* Boy. Yet sometimes when there are more Adjectives than one joined together, or one Adjective with other words depending on it, the Adjective may be set after the Substantive; as, a General both *wise* and *valiant:* A Man *skilful* in numbers.

When two Substantives come together in composition, the first takes to itself the nature of an Adjective, and is commonly joined to the following Substantive by an hyphen; as, a *sea-fish*

Substantives and Adjectives are declined to ether thus.

Singular.	*Plural.*
Nom. A good Boy,	Nom. Good Boys.
Gen. Of a good Boy,	Gen. Of good Boys.
Dat. To a good Boy,	Dat. To good Boys.
Acc. The good Boy,	Acc. The good Boys.
Voc. O good Boy!	Voc. O good Boys!
Abl. From a good Boy,	Abl. From good Boys.

Of the Comparison of Adjectives.

By a Comparison is meant the variation of a word by degrees, according to the quantity of its signification.

Those Adjectives admit of Comparison whose signification may be increased or diminished; none else.

There are three Degrees of Comparison; the positive, the comparative, and the superlative.

The Positive Degree mentions the thing absolutely without any increase or diminution; as, *long, short, wise.*

The Comparative somewhat increases or diminishes its positive in signification; as, *longer,* or *more long; shorter,* or *more short; wiser,* or *more wise.*

The Superlative increases or diminishes the signification of its Positive to the utmost degree; as, *longest,* or *most long shortest,* or *most short; wisest,* or *most wise.*

All Adjectives do not admit of this Comparison; some are irregular, as *good, better, best; bad, worse, worst; much, more, most; little, less, least.*

Of Pronouns.

A Pronoun is a part of Speech that supplies the place of a Noun.

There belong to a Pronoun, number, case, gender, person, and declension.

There are two kinds of Pronouns, substantives and adjectives.

Pronoun Substantives are these: *I, thou,* or *you; he, she, it;* and their plurals, *we, ye,* or *you, they.*

Pronoun Adjectives are, *my, mine, thy, thine, our, ours, your, yours; who, which, what; this, that, same, himself, herself, itself,* &c.

The Pronoun Adjective is used thus: By some a question is asked; as, *Who teaches me? What new method is this?* By others we learn the true possessor of a thing; as, *This is my Book.* By some we call to mind something that is past; as, *This is the Book which* [book] *I lent you.* By others we demonstrate our meaning; as, *What I said to John, the same I say to you; Live well.*

Note, Pronouns have no Articles before them, except for distinction, and by way of eminence; as, *God is the* same, *yesterday, to-day, and for ever.*

Pronouns of the first person are, *I* and *we.*

Pronouns of the second person are, *thou,* or *you,* and *ye* or *you.* The rest are of the third.

The Pronoun *I* is declined thus:

Singular.	*Plural.*
Nom. I,	Nom. We.
Gen. Of me,	Gen. Of us.
Dat. To me,	Dat. To us.
Acc. Me,	Acc. Us.
Voc. *Is wanting.*	Voc. *Is wanting*
Abl. From me,	Abl. From us.

The Pronouns *thou* or *you* are declined thus:

Singular.	*Plural.*
Nom. Thou or you,	Nom. Ye or you.
Gen. Of thee or you,	Gen. Of you.
Dat. To thee,	Dat. To you.
Acc. Thee or you,	Acc. Ye or you.
Abl. From thee or you.	Abl. From you

Of a Verb.

A Verb is a part of Speech that betokens being, as *I live:*—doing, as *I love:*—or suffering, as *I am loved.*

There are three kinds of Verbs; active, passive, and neuter.

A Verb active, is a verb that denotes action; but in such a manner as to denote the subject of the action, as *I love Penelope.*

A Verb passive betokens suffering, or the receiving of an action, as *I am loved.*

A Verb neuter signifies the state or being, or sometimes the action, of a person or thing, but has no noun after it to denote the subject of the action.

A Verb neuter is expressed two ways; sometimes actively, as *I fight;* and sometimes passively, as *I am sick.*

Four things belong to a Verb, viz. mood, tense, number, and person.

Of the MOODS.

A Mood is a particular form of the verb, showing the manner in which any action is performed.

There are six Moods: the indicative, the imperative, the optative, the potential, the subjunctive, and the infinitive.

1. The indicative Mood directly declares a thing true or false; as *I read;* or else asks a question, as *do I read?*

2. The imperative Mood bids or commands; as *read thou.*

3. The optative Mood wishes or desires; as *I wish I could read.*

4. The potential Mood shews power, or the want of it, and is known by these signs: *may, can, might, would, should, could,* or *ought;* as, *I can work or play, just as I please; John would play, but his master would not let him.*

5. The subjunctive Mood is conditional, and always connected with a conjunction, expressed or implied, as, *If I may read.*

6. The infinitive Mood affirms nothing, but signifies indefinitely, having neither number nor person, nor nominative case before it; and it is commonly known by the sign *to* before it; as, *To love.*

Of the TENSES.

Tense is the distinction of Time.

There are three Tenses,—*present, past, to come,* viz. *Present tense, preterperfect tense,* and the *future tense.*

There is also another division of time, after this manner: the preterperfect Tense is subdivided into the preterimperfect Tense, or the time not perfectly past; and the preterpluperfect Tense, or the time long past.

And to these may be added, what the Greeks called a second future.

The present Tense is known by the signs *do, doest, does, doeth;* and speaks of an action now doing, but not finished; as, *I do read;* that is, *I have not yet done reading.*

The preterperfect Tense is known by the signs *have, hast, hath,* and *has,* and speaks of the time perfectly past, and of the action finished, without regard to any thing else; as, *I have read,* or *quite done reading.*

The preterimperfect Tense is known by the signs *did* and *didst,* and speaks of the time past; but shews that something was then

doing, but not finished at the time which we speak of; as *I did read while you was at play.*

The preterpluperfect Tense is known by the signs *had* and *hadst*, and speaks also of the time past, but shews that something had been done before another thing that was done and past; as, *I had read an hour before I wrote my exercise.*

The first future Tense is known by the signs *shall* or *will*, and speaks of a short space of time to come; as, *I will read presently: You shall write to-morrow.*

The second future Tense is known by the signs *shall* or *will hereafter*, and speaks of a long space of time to come; as, *I shall read hereafter.*

Of the NUMBER *of* VERBS.

There are two Numbers in Verbs: the singular and the plural.

The number of the Verb is known by the number of its nominative case.

All Verbs have numbers: but Verbs of the infinitive mood have no number, because they admit nominative case.

Of the PERSON *of* VERBS.

Verbs are otherwise divided, into personals or impersonals.

A Verb personal will admit the pronouns, *I, thou, he, she,* or their plurals, *we, ye,* or *they,* before it.

A Verb impersonal is an absolute Verb, which has only one person, and therefore can only admit of the Pronoun *it* before it; as, *it rains; it freezes; it is hot; it is cold.*

There are two kinds of Impersonals: active, as, *it rains;* passive, as, *it is warm.*

Of the auxiliary or helping VERBS.

The following are called helping Verbs, being commonly set before other Verbs, viz. Helping Verbs of the present time are formed thus:

Singular. I do, thou doest *or* you do, he does.
Plural. We do, ye do *or* you do, they do.
Singular. I may, thou mayest *or* you may, he may.
Plural. We may, ye may *or* you may, they may.
Singular. I am, thou art *or* you are, he is.
Plural. We are, ye are *or* you are, they are.

Can and *be* are formed in the same manner.

Helping Verbs of the past time are thus formed:

Singular. I did, thou didst *or* you did, he did.
Plural. We did, ye did *or* you did, they did.
Singular. I have, thou hast *or* you have, he hath *or* has.
Plural. We have, ye have *or* you have, they have.
Singular. I was, thou wast *or* you were, he was.
Plural. We were, ye were *or* you were, they were.

Had, might, and *could,* are formed in the like manner.

Helping Verbs of the future time thus:

Singular. I shall, thou shalt *or* you shall, he shall.
Plural. We shall, ye shall *or* you shall, they shall.
Singular. I will, thou wilt *or* you will, he will.
Plural. We will, ye will *or* you will, they will.

Such Verbs as can be formed through the present and past times without the aid of any of these helping Verbs, are called principal Verbs, and are formed thus:

Sing. I love, thou lovest *or* you love, he loves.
Plu. We love, ye love *or* you love, they love.

In the time past thus:

Sing. I love, thou lovedst *or* you loved, he loved.
Plu. We loved, ye loved *or* you loved, they loved.

The future time is formed by the help of *shall* or *will.*

There are four sorts of principal Verbs, as before observed, viz. active Verbs, which signify doing or being: passive, by the help of *am* and *he,* which signify suffering; imperatives, that bid or command; and infinitives, or such as have an unlimited sense, known by the sign *to* before them.

Verbs that make the past time by adding *ed* to the present, as, *I live, I lived,* &c. are called regular Verbs, as being formed after the common or usual way; but there are several irregulars, which are formed differently.

An irregular Verb is thus formed, in the present time:

Sing. I fly *or* am flying, thou fliest *or* you fly, he flies.
Plu. We fly, ye fly *or* you fly, they fly.

In the past time:

Sing. I flew, fled, *or* did fly, *or* was flying; thou fledst *or* didst fly, *or* you flew, fled, *or* did fly; he flew, fled *or* did fly.
Plu. We, ye *or* you, *and* they, flew, fled, *or* did fly.

Of a PARTICIPLE.

A Participle is a word derived from a Verb, and signifies being, doing, or suffering; and also implies time as a Verb does, but is otherwise like a Quality. Participles must end in *ing;* as *loving, reading:* and sometimes in *d, t,* or *en;* as, *loved, taught, slain,* coming from irregular Verbs. But when such words have an Article before them, and are joined to a name, they are properly called Qualities; as, *a loving father, an obliging servant, a dancing dog, a learned man, a lion rampant, the prince regent,* &c. But when we say, *I am writing a book; Ye have praised the book; I am mending a pen;* they are merely Participles, and are always such when they have any relation to the time of acting and suffering.

Of an ADVERB.

An Adverb is a Participle joined either to a Verb, to a Quality, to a Participle, or to another Adverb, to explain their manner of

acting or suffering, or to point out some peculiar circumstance, quality, or manner, signified by them.

Adverbs mostly imply time, place, number, order, quantity, affirming, denying, or doubting; as, *now, to-day, already, before, yesterday, when, then, ever, never, here, there, where,* &c.

There are likewise many Adverbs of comparing; as, *how, as, so, how much, less, least, very, rather, than,* &c. Some Adverbs may be compared like Qualities: as, *soon, sooner, soonest; often, oftener, oftenest.* All words that end in *ly* are Adverbs; therefore there are few Qualities but may be turned into Adverbs by the addition of *ly;* as, *meek, meekly; sweet, sweetly.*

Of a Conjunction.

A Conjunction is that part of Speech that joins words and sentences together, shews the reason of a thing, or lays a subject under condition.

The Conjunction joins both the words and the sense of a sentence; as, I study, *and* Peter plays. It joins words, but disjoins the sense; as, I *or* Peter shall be punished. It shews the cause or reason of a thing; as, I do study *that* I may be learned. It renders the speech doubtful; as, *If* the sky falls, we shall catch larks.

Some Conjunctions may be reckoned Adverbs, and some of the Adverbs used as Conjunctions, without any great impropriety; as *whether* is a comparative Adverb and a suspensive Conjunction, &c.

Of a Preposition.

A Preposition is a part of Speech set separate or before other parts, especially names, to shew the respect or relation one thing has to another, implying mostly motion to, or from a place, as follows: *Above, about, after, against, among, amongst, at, before, behind, beneath, between, beyond, by, through, besides, for, from, in, into, on, upon, over, out, of, to, unto, towards, under, with, off, within, without.*—*Example.* I went *from* Hull, *through* York, *to* Leeds.

Of an Interjection.

An Interjection is a part of Speech, which denotes a sudden passion of the mind, without the help of any other words: and therefore Interjections are as various as the sudden passions of the mind; as, Ho, brave boys! Here is news for you! Ah! alas away! fie! ha! ho! heigh! hem! hush! O! O brave! O strange! sirrah! soho! tush! well done! &c.

Of the DERIVATION *of* WORDS.

A Derivation of words shews how every word may be formed in its proper case, mood, tense, and quality.

The genitive case singular is formed without the Preposition *of* prefixed, by putting *'s* to the Substantive of the possessor; as, The master's eye, *i. e.* The eye of the master.

Many Substantives, and sometimes Adjectives, and sometimes the other parts of speech, become Verbs by prefixing the sign *to* before them, or by adding the termination *en* to the Adjective; as, from a *house*, comes *to house*; from *warm*, *to warm*; from *hard*, *to harden*.

Substantives come sometimes from Verbs: almost every Verb has some Substantive coming from it; for by the addition of *er* to the ending of the present tense, comes a Substantive signifying the *agent* or *doer*, which is therefore called a verbal Noun; as, from *to hear*, comes a *hearer*; from *to carry*, a *carrier*.

Note, Some Substantives are formed from Verbs by the addition of *or* to the ending of the present tense; as, from *to govern*, comes a *governor*; from *to solicit*, a *solicitor*; from *to visit*, a *visitor*; from *to possess*, a *possessor*; from *to sail*, a *sailor*; from *to direct*, a *director*; also from *to contribute*, a *contributor*; and from *to survive*, *survivor*, dropping the *e*.

Adjectives are sometimes formed from Substantives.

1. By adding the termination *y*, are formed Adjectives; as, from *health*, comes *healthy*; from *wealth*, *wealthy*.

2. By adding the termination *en*; as, from *ash*, comes *ashen*; from *birch*, *birchen*; from *oak*, *oaken*.

3. By adding the termination *ful*; as, from *joy*, comes *joyful*; from *youth*, *youthful*; from *sin*, *sinful*.

4. By adding the termination *some*; as, from *trouble*, comes *troublesome*; from *game*, *gamesome*.

5. By adding the termination *less*; as, from *worth*, comes *worthless*; from *help*, *helpless*; from *tooth*, *toothless*.

Note, The same thing is signified by *un*, *in*, or *im*, prefixed to Adjectives; as, *unpleasant*, *indecent*, *improper*, &c.

6. By adding the termination *ly*; as, from *man*, comes *manly*; from *God*, *godly*; also from *fit*, comes *fitly*; from *certain*, *certainly*.

7. By adding the termination *ish*; as, from *wolf*, comes *wolfish*; from *child*, *childish*, *sheep*, *sheepish*; also from *book*, comes *bookish*; and from *tickle*, *ticklish*.

Words are derived from their primitives, by adding *-ship*, *-dom*, *-rick*, *-wick*, *-ness*, *-head*, *-hood*.

1. Words ending in *ship*; as stewardship, fellowship, lordship, &c.

2. Words ending in *dom*; as popedom, kingdom.

3. Words ending in *rick* and *wick*; as bishoprick, bailiwick.

4. Substantives ending in *ness;* as from white, comes whiteness; from hard, hardness, &c.

5. Nouns that end in *head,* and *hood;* as godhead, manhood, widowhood, brotherhood, livelihood, &c.

Note, There are also Substantives (derived from Adjectives and Verbs) which are made by adding to the ending *th,* with some small change; as, from *long,* comes *length; strong, strength; warm, warmth; moon, month,* &c. also from *to die,* comes *death;* from *grow, growth,* &c.

Of Substantives Diminutive.

A Substantive diminutive is another method of derivation by which a noun is formed, to lessen the sense of its primitive word: as, from *lamb,* comes *lambkin,* which is a little lamb.

Of Syntax.

Syntax is the disposing of words in their right case, gender, number, person, mood, tense, and place, in a sentence. *Example.* Good boys are not beaten: Here the words are placed according to Syntax; whereas should I say, Beaten not are boys good, it would be unintelligible; because here is no syntax in this sentence.

There are two kinds of sentences, viz. simple and compound.

A simple sentence is that wherein there is but one Verb, and one nominative word of the subject, either expressed or understood; as, *the boy reads.*

A compound sentence is two simple sentences joined together by a conjunction, or by a relative; as, *who, which, that;* or by a comparative word; as, *so, as, such, so many, as many, more, than:* as, I am diligent, *and* you are negligent. He is a naughty boy, *who* deserves correction.

A nominative word is the word that goes before the Verb, and answers to the question *who,* or *what;* as, boys play. Where it may be asked, *Who* plays? Answer, boys.

The nominative case or word always goes before the Verb, except when a question is asked, and then the nominative case follows the Verb, or more commonly the sign of the Verb; as Did *John* go to London? Do *I* neglect my business?

The Verb must be of the same number and person with the nominative word; as, I stand, thou standest, he stands; *not* I standest, thou stands, he stand.

If two or more Substantives singular come together, the Verb must be put to the plural number; as, Peter and John *fight.*

When a Verb follows a Noun of multitude, it must be put in the plural, when circumstances absolutely determine the case to

be more than one; but it is most commonly of the singular number; as, The multitude is very *noisy*; The heap is *removed*.

All the parts of a sentence should correspond to each other: a regular and dependent construction, throughout, should be carefully preserved. The following sentence is therefore inaccurate: "He was more beloved, but not so much admired, as Cinthio." *More* requires *than* after it, which is no where found in the sentence. It should be, "He was more beloved than Cinthio, but not so much admired."

Of Transposition.

Transposition is the placing of words out of their natural order, to render the sound of them more agreeable to the ear.

Example. It cannot be avoided but that scandal will arise, and differences will grow in the Church of God, so long as there is wickedness on earth, or malice in hell.

Transposed. It cannot be avoided, so long as there is wickedness on earth, or malice in hell, but that scandal will arise, and differences will grow in the Church of God.

Of the Ellipsis.

An Ellipsis is the leaving out of words in a sentence; as,

1. When a word has been mentioned just before, and may be supposed to be kept in mind; therefore in a relative sentence, the *antecedent*, or foregoing word, is seldom repeated; as, *I bought the book, which* (book) *I read.*

2. When any word is to be immediately mentioned, if it can be well understood, it ought to be left out in the former part; as, *Drink ye red* (wine) *or white wine?*

3. When the thought is expressed by some other means; as, pointing to a man, you need not say, *Who is that man?* but *Who is that?*

4. Those words, which upon the mentioning of others must needs be supposed to be meant, may be left out; as, *When you come to St. Paul's* (church) *then turn to the left* (hand).

Of Abbreviation.

Abbreviation is a contraction or abridgment of a word or passage, by leaving out part of the letters, or substituting other marks or characters in the room of words; as, *it's*, for it is, *I'll*, for I will, *Wpful.* for Worshipful, *can't* for cannot, *Nov.* for November, *Esq.*

for Esquire, *Bart.* for Baronet, *D. D.* for Doctor of Divinity, *Hants.* for Hampshire, *Matt.* for Matthew, *Wm.* for William, *&c.* for *et cetera, and so forth.*

Contractions ought to be avoided as much as possible, unless it be for a person's private use, and where it would be ridiculous to write them at length; as *Mr.* for Master, *Mrs.* for Mistress, &c. It argues likewise a disrespect and slight to use contractions to our superiors, and is often puzzling to others.

WRITING.

DIRECTIONS *for* WRITING.

IT is necessary to be provided with good pens, ink, and paper, likewise a flat ruler for sureness, and a round one for dispatch; with a leaden plummet or pencil to rule lines.

The principal things to be aimed at, in order to write any hand well, are these two: first, to get an exact notion or idea of a good letter, which may be done by frequent and nice observation of a correct copy: the other is, to get such a command of hand, as to be able to express, with the pen, the idea upon the paper; which is attained by constant and careful practice after good examples. The learner will do well to carefully attend to the following observations.

1. The essential properties of a good piece of writing are, a due proportion of the characters throughout the whole; a just distance between the letters themselves, as well as the words; a natural leaning or inclination of the letters one to another; together with a clean smooth stroke, performed with a masterly boldness and freedom.

The proportion of the several letters, in most hands, is generally regulated by the *o* and *n*; therefore let the making of them be the first of your care and practice, and the other letters must be of the same fulness of stroke as they are.

The proportion and shape of the letters in any hand ought to be the same, whether they are written in a large or small size; therefore, let every hand be first learned in a large character, which will not only fix the idea of a good letter sooner in your mind, but also give you a much greater freedom, and in a shorter time, than in writing the small way. It is certain, that the lesser is always contained in the greater? and he who attains to write any hand large, may soon write it as small as he pleases.

2. Hold your pen between the two fore-fingers extended almost straight, and the thumb bending a little outward, and in your right hand, with the hollow side of your pen downwards, and the nib flat upon the paper: let it rest between the two upper joints of the fore-finger, and upon the end of the middle one, about an inch from the nib of the pen; the end of the little finger, and that which is next to it, bent in towards the palm of the hand, about half an inch distant from the end of the middle finger. Let the book or paper lie directly before you, and your hand rest only on the tip of your little finger; let no other part of your arm or wrist touch the paper or desk; let your elbow be almost close to your side, and the pen pointed towards the outer part of the right shoulder: rest your left arm very lightly between the wrist and elbow, keeping your body upright, and from touching the desk. And for the slope hands, turn your left side a little towards the desk; but in the upright ones, let the body be directly before it, and the right elbow turned outward from your side.

To make a PEN.

Scrape off the thin rind of the quill with the back edge of your penknife, and hold it in your left hand, with the feather end from you; then enter the back thereof sloping, and cut off in length twice the circumference of the quill, and then cut off as much from the inside. Then turn the quill, and enter your penknife into the middle of the back, taking care that the blade, in making the slit, shall not incline to the one side nor to the other. Then put in the peg of your penknife-haft, or the end of a whole quill, and with a sudden twitch force up the slit, holding your left-hand thumb upon the back of the quill, to prevent the slit from going too far. Then enter your knife, sloping, on the other side above the slit, about twice the breadth of the quill, and cut away the cradle-piece; then turn the back upwards, and cut down to the end of the cheek or shoulder pieces, and in so doing turn the knife on both sides towards the back. Then place the inside of the end or nib of the pen upon the nail of your left-hand thumb, holding the quill fast between the fore and middle finger of that hand. To finish the nib, enter the edge of the knife on the back, and near the end thereof, sloping, and immediately turning the edge almost downward, cut it off.

To make the best BLACK INK.

To six quarts of rain water put one pound and a half of fresh blue galls of Aleppo, bruised small; eight ounces of copperas, clean, rocky, and green; eight ounces of gum arabic; and two ounces of roch-alum. Let these stand together in a large stone bottle: shake it well once every day, and you will have fine ink

in about a month's time; and the older it grows the better it will be for use.

Ingredients for a Quart.

One quart of water, four ounces of galls, two ounces of copperas, and two ounces of gum, mixed and stirred as above.

London INK POWDER.

Take ten ounces of the clearest nut galls; bruise them, and sift the powder very fine: then add white copperas, two ounces; Roman vitriol, three ounces; gum arabic or sandarick, an ounce: bruise and sift them very fine, so that though they appear very white, a little being put into water will in a short time turn it; and an ounce of powder will make a pint of very black ink.

Japan or Shining INK.

Take gum arabic and Roman vitriol, of each one ounce; galls well bruised, a pound; put them into rape vinegar, or vinegar made of clean small beer: let them remain in a warm place, often stirring, till the liquor becomes black; then add to a gallon an ounce of ivory black, and a quarter of an ounce of seed-lac varnish; and it will be a curious black shining ink.

A Powder INK, *to rub upon a Paper and write on.*

Bruise about twenty nut galls, half an ounce of Roman vitriol, and as much gum arabic and gum sandarick; mingle these fine together: when well bruised and sifted to powder, rub the paper hard with cotton wool, and, polishing it with a piece of ivory, write with water, and in a little time the letters you write will appear a fair black, as if written with the best ink.

To make RED INK.

Take three pints of vinegar, and four ounces of ground Brazil wood, simmer them together for half an hour; then put in four ounces of roch allum: and these three are to simmer together for half an hour; then strain it through a flannel, and bottle it up, well stopped, for use.

A second Method.

Take half a pound of quick lime and two quarts of water; mix them together, and let them stand a day and a night; then pour off the clear water, and put a pound of Brazil wood shavings into it: boil it half away, or till upon trial the red liquor is strong enough to write with: this done, put in two ounces of gum arabic, and one ounce of allum: when these are dissolved, strain off the ink, and keep it for use.

A third Method.

Take a pint of stale beer, two ounces of shavings of Brazil wood, half a quarter of an ounce of cochineal, two ounces of

roch allum: boil them together, pour off the clear liquid, and add thereto an ounce of gum arabic.

To keep INK *from freezing or moulding.*

In hard frosty weather ink will be apt to freeze; which, if once it doth, will be good for nothing; for it takes away all its blackness and beauty: to prevent which, if you have not the conveniency of keeping it warm, or from the cold, put a few drops of brandy, or other spirits, into it, and it will not freeze: and to hinder its moulding, put a little salt therein.

How to write SECRET LETTERS.

Write what you would have seen on one side of the paper with common ink, and on the other side with milk that which you would have secret; and when you would make the same legible, direct your friend to hold that side which is written with ink to the fire, and the milky letters will shew bluish on the other side, and easy to be read.

Another Way.

Write a letter with the juice of onions; and let the person who is to read it hold the paper near the fire till the writing appears of a reddish colour, and the letter may be easily read.

Previous to the commencement of writing on any subject, the mind of a young person should be properly stored with moral sentiments, both in prose and verse. We shall here give a few specimens; and if he continues to write down these from time to time, he will be in no great danger of forgetting them.

Single Line COPIES *in Prose.*

Accustom your Children to a true Notion of Things
A flattering Companion is a dangerous Enemy
A prudent Man values Content more than Riches

Be patient in Adversity, and humble in Prosperity
By learning to Obey, you shall know how to Command
By Diligence and Industry we come to Preferment

Children require Instruction as well as Provision
Chide him not too much who confesses his Fault
Consider the Shortness of Life, and Certainty of Death

Death destroys not the Soul, but an ill Life does
Do unto others as you would have them do unto you
Do not render Evil for Evil unto any Man

Every Delay of Repentance is a Cheat upon ourselves
Every prudent Man dealeth with Knowledge
Exalt Wisdom, and she shall promote thee

Forsake the Foolish, and go in the Way of Wisdom
Future Events must be left to Providence
Frugality and Industry are the Hands of Fortune

Give God the first and last of each Day's Thoughts
God often corrects us in this Life, to save us in the next
Good Manners, Grace, and Truth, are Ornaments in Youth

Happiness is desired by all, but obtained by few
Hear both Parties before you give Judgment
He that boasts in his Sins glories in his Shame

If Riches increase, set not your Heart upon them
Industry keeps the Mind clear, and the Body healthy
In the Multitude of Counsellors there is Safety

Knowledge is the Treasure of the Mind
Keep good Company, and you shall be of that Number
Kings may win Crowns, but cannot conquer Death

Lying Lips are an Abomination to the Lord
Learn to live as you would wish to die
Let not the work of To-day be put off till To-morrow

Man has much to learn, and but a short Time to live
My Son, if Sinners entice thee, consent thou not
Many are led by the Ears more than by the Understanding

Necessity is commonly the Mother of Invention
Nothing is more contagious than an ill Example
Not to grow better is commonly to grow worse

One Fault cannot justify the Commission of another
One Vice is more expensive than ten Virtues
Of all Things, Death should never be forgot

Pursue useful and profitable Studies
Poverty and Shame attend those that refuse Instruction
Poor Men want many Things, but covetous Men want all

Quench not the Spirit; pray without ceasing
Quench not your Desires when they tend to Good
Quarrelsome Persons sometimes meet their Match

Repentance is the Physic of the Soul
Religion is best understood when most practised
Remember thy Creator in the Days of thy Youth

Shame and Disgrace shall be the Portion of Fools
Silence is an Antidote against an envious Tongue
Sin and Sorrow are inseparable Companions

The Hope of Reward sweetens Labour
The Power of Example prevails more than Precept
The Worth of a Thing is best known by the Want of it

Use soft Words and hard Arguments
Unlawful Love generally ends in Bitterness

Undertake deliberately, and execute vigorously

Virtue is commended by all, but followed by few
Virtue often suffers when Vice goes unpunished
Valour can do little without Discretion

Whatever is forbidden in Act, is also in Thought
Wicked Practices discover bad Principles
Would you be wise, endeavour to be good

Xenophon accounted the wise Man happy
Xenophon was a learned General
Xerxes wept at the changeable State of Man

Young Men, see that you honour the Aged
You may know Men by the Company they keep
Your Vice, and not your Poverty, is your Shame

Zealously strive for an eternal Crown
Zeal, grounded on Knowledge, enlivens Devotion
Zeal in a good Cause commands Applause

COPIES *of two Lines in Verse.*

An honest man's the noblest work of God ;
But fools shall tremble when they see the rod.

Brave minds should ne'er at adversities complain,
For patience will the virtuous man sustain.

Contentment's often sought, but seldom found ;
And those who follow pleasure, conscience wound.

Despise not learning, court her friendly ways :
By thee improv'd, she'll crown thy years with praise.

Eternal blessings shall the man attend,
Who loves religion, and respects his friend.

Friendship, if well improv'd, will ease our pain ;
And those who know it, seldom will complain.

Greatness and glory often are combin'd,
But virtuous acts alone adorn the mind.

Health, happiness, and heav'n, are near ally'd,
And vice is virtue when it's course is stay'd.

Industry leads a man to fame and love,
And piety shall crown his works above.

Keep company with men of sense, and not with fools,
And still attend to virtue's sacred rules.

Let no mean cares your peace on earth molest :
For virtue will for evermore be blest.

Mercy is godlike, cruelty's as the devil,
And those fear God who shrink at doing evil.

Nothing on earth can give our souls repose,
Till God in heaven shall wipe away our woes.

O youth! remember that thy years are few;
They waste away like to the morning dew.

Pure virtue should adorn our state below,
And 'tis a godlike attribute to know.

Questions with meekness should be still propos'd
For by such means the truth is oft disclos'd.

Repentance is a virtue heav'nly bright,
And those who have it shall enjoy delight.

Satire well writ, has still successful prov'd,
And cures because the remedy is lov'd.

Time was, a sober Englishman would knock
His servants up and rise by five o'clock.

Vain man, how trifling still are all thy ways,
Thy life a bubble, future hopes a maze.

Untoward actions never yield content,
And what is idly got is idly spent.

Wisdom and worth for ever are combin'd,
And glory shall adorn the virtuous mind.

Xerxes led his Persian troops from far,
But Grecian valour clos'd the glorious war.

Young ones, like tender osiers, take the bow,
And as they first are fashion'd always grow.

Zeal should inspire us to find out the truth,
But prudence guides the unexperienc'd youth.

Directions for LETTER WRITING.

IN writing letters, regard must be had to the rank and character of the persons to whom they are addressed: we must write to superiors with humility, modesty, decency, and respect; to equals with all the affability of innocent and virtuous friendship, in the same manner as if we were conversing together; and to inferiors with that tenderness which should distinguish our characters as men and christians. Letters should neither be too long nor too short; they should contain the subject-matter, in easy, familiar, and engaging language, so as neither to appear tedious nor trifling. Flowing from the heart, the sentiments should be directed to the warmest passions, but the understanding should not be left uninformed. A letter should exhibit a picture of the mind, it should begin and end with propriety, and it should be properly directed. It is owing to the non-attendance to these rules that many persons make them-

selves ridiculous without being sensible of it; for it is much to be lamented, that some persons never consider that their letters, although directed to particular friends, yet may happen to fall into the hands of those who will make severe animadversions upon them; instances of this might be given, but we would rather point out the means by which persons, and especially youth, may guard against such errors, than to expose those weaknesses which are peculiar to the inconsiderate part of mankind. We, therefore, have added a Collection of familiar Letters, on several occasions, and on various subjects; which it is presumed will be of great utility.

A Letter from a Son to his Father.

Hon. Father,

As I have not had a letter from you since your favour of the 8th of October last, which I answered by the next post, I take the opportunity of inquiring after your health, and that of my sister. Pray give my love to my sister, and be pleased to accept of my duty to yourself; who am, Sir,

Your most dutiful son, and humble servant,

Liverpool, Feb. 8, 1821. ANTHONY ADDISON.

The Answer.

Dear Son, *Pensey, Feb. 28th*, 1810.

I received your letter of the 8th instant, and am glad you are concerned to know the state of my health, which, I thank God, I perfectly enjoy at present, as I wish and hope you do. Your sister remembers her love to you, and hath sent you, as a token of her regard, a few things as a present, which she hopes you will receive in safety. My prayers to God for your prosperity, temporal and eternal, are constantly offered up by

Your loving father,

ANDREW ADDISON.

A Letter from a Niece to her Aunt.

My dear Aunt,

THE trouble I have already given you puts me to the blush, when I think of intruding again on your goodness; but necessity, which frequently obliges us to such actions as are contrary to our inclination, is the motive that induces me to be thus troublesome now. Pray, dear aunt, excuse me, if I once more beg your assistance, which I do not doubt but you very well know I stand greatly in need of at this time; and I shall ever have a grateful remembrance of your goodness to me; and I hope I shall be, one time or other, in a capacity of making some return for the many obligations your goodness hath conferred upon me.

Your most respectful niece,

and very humble servant,

Portsea, June 9, 1821. PENELOPE PRATT.

A Letter of proffered Assistance to a Friend.

Dear Friend,

I should be false to true friendship, if I should neglect or cast off my friend in adversity: I have heard that you are under some misfortune, and at present need my assistance. I, therefore, send these lines for your consolation, desiring you to bear up against your seeming adverse fortune, with as much presence of mind as you can; for, assure yourself, I shall suddenly follow this epistle in person, and come, I hope, opportunely enough for your assistance; till which time take courage, and be assured that you shall not be disappointed of timely help, from,

Dear friend, yours in reality,

Manchester, Nov. 5, 1821. TIMOTHY MASON.

A Brother to a Sister.

Dear Sister,

MY great distance and long absence from you (though I have not wanted good company) make me very solicitous concerning your welfare: natural affection inclines me strongly to have you in remembrance, tendering your health and welfare, in every respect, as dear as my own; and there is nothing at my command, but, if you request it, shall be freely yours. Notwithstanding the distance, I purpose (God willing) to make you a visit very shortly, and I had done it before now but an urgent occasion interposed, the particulars of which being too long for a letter, I shall acquaint you with when I see you. Pray give my due respects to all friends, particularly to honest Mr. S. T. And so, in expectation of finding you all well at my arrival, I conclude, dear sister,

Your affectionate brother,

London, Feb. 13, 1821. HENRY JONES.

A Letter from a Youth at School to his Parents.

Honoured Father and Mother,

I am very much obliged to you for all your favours: all I have to hope is, that the progress I make in my learning will be no disagreeable return for the same: gratitude, duty, and a view to future advantages, all conspire to make me fully sensible how much I ought to labour for my own improvement, and your satisfaction, in order to shew myself upon all occasions to be

Your most obedient son,

Acton School, Sept. 13, 1821. DANIEL SPENCE.

A Letter of Recommendation.

Sir,

THE bearer hereof, Francis Dixon, I send to you as one whose honesty you may rely on; and my experience of his con-

duct and fidelity, gives me a certain kind of confidence in recommending him to you; for you know me, Sir, and I believe you cannot in the least think, that I would recommend any one to you, of whose probity I had the least shadow of doubt or suspicion. I am, with due respect, Sir,

Your real friend,

Sept. 12, 1821. and humble servant,

GEORGE SHORTON.

A Letter of Thanks.

Sir,

I received your favour, with the kind present which accompanied it. I have no other way of expressing my gratitude at present, than by my hearty thanks; every thing you do has a peculiar excellence, and the manner of doing it is as agreeable as the action itself; but I must stop, lest I should offend that delicacy which I would commend, and which is constantly admired by,

Sir,

Your most obliged,

Feb. 13, 1821. and most humble servant,

PETER SULLIVAN.

A Letter of Congratulation.

Sir,

As I am perfectly sincere in the professions of friendship which I have constantly made to you, you will certainly believe that I am sensibly rejoiced at your late good fortune: I heartily wish you greater success, and beg that you will always continue me in the number of those whom you permit to subscribe themselves, as I do now,

Sir,

Your most obedient,

London, and most faithful servant,

Jan. 13, 1821. JOHN GOODWIN.

A Letter of Inquiry of Health.

Sir, *Hammersmith, Jan.* 15, 1821.

NOT hearing from you in such a length of time, as from the 11th of November last, I am concerned lest sickness, or some other accident, hath happened to you, or to some one of your family: my uneasiness occasions my giving you this trouble, and I wish that I may find things with you better than my fears suggest; however, be pleased to let me know the certainty with all convenient speed; and thereby you will very much oblige,

Sir,

Your real friend, and very humble servant,

MATT. JOHNSON.

A Letter by way of Petition to a Friend.

Honoured Sir,

I am uncertain whether my late misfortunes have come to your knowledge: however, I most humbly presume on your good nature, being assured of sundry examples of your compassion, that you will think of and take pity on the distressed; therefore, as an object truly deserving compassion, I most humbly implore and petition you to consider the many losses and disappointments that I have lately met with, which have reduced me to such necessitous circumstances, that I cannot possibly proceed in my affairs. You was pleased once to style me your friend, and so I was indeed; and so I would most certainly be now, and shew it by a signal proof of kindness, if our circumstances were changed, by standing between you and misfortune, screening you from the contempt incident to poverty and distress. I doubt not, sir, but your generosity and goodness are as great; and I hope, with all humility, you will be pleased to interpose your good offices between ruin and, Sir,

Your very humble servant,

LAWRENCE ADAMS.

A Letter of Kindness.

Sir,

YOURS of the 25th ult. is now before me: in answer to which I positively declare, that Mr. A. B. hath not been with me to present the Bill of Exchange that you mentioned in your letter of advice to me; and, therefore, there can be no just cause of protest, or any other charge, put on, Sir,

London,
Sept. 13, 1821. } Your humble servant,

JOHN THOMAS.

Letter from a young Man at Sea to his Mother.

My very dear Mother,

YOUR Letter of 2d July I most gladly received, and my joy was increased to find you in health. Although I have not had it in my power to write often to you, yet I had wrote two letters since we sailed from the Downs, and am surprised you did not receive either of them. After accompanying the grand expedition to Holland, I was drafted to a fifty-gun ship, which sailed immediately for the Mediterranean; in our passage thither we took a privateer, and chased some others without capturing them. Our voyage was pleasant till we arrived off Cape St. Vincent, when we encountered a severe storm, which did us some damage; but we soon refitted at Gibraltar, and then proceeded on our voyage. I have been at Malta and Sicily, and have often cruised on the coast of Italy, France, and Spain. Thank God, I am in good health, and have met with no other accident than a slight wound, in boarding some vessels which took refuge in the bay of Rossas last Octo-

ber. I expect to receive my prize-money next month, which I intend to send to you, begging you will make what use of any part of it your necessities require. To see my dear mother again would be my greatest joy. May peace send me home to you soon. In the mean time, believe me to be your affectionate son.

Port Mahon, Dec. 8, 1821. JOHN STEPHENS.

SUPERSCRIPTIONS *for* LETTERS.

To the King's Most Excellent Majesty.

To the Queen's Most Excellent Majesty.

To the Prince. To his Royal Highness, &c.

To the Princess. To her Royal Highness, &c.

To Archbishops. To his Grace the Lord Archbishop of Canterbury; or, To the most Reverend Father in God, &c.

To Bishops. To the Right Reverend Father in God, &c.

To Deacons, Archdeacons, &c. To the Reverend *A*— *B*—, D. D. Dean of W———.

To the inferior Clergy. To the Rev. Mr. *A*—, &c. or, To the Rev. Doctor, &c.

To the great Officers of State. To the Right Honourable *R*— Lord *H*—, Lord High Chancellor of Great Britain. Lord President of the Council. Lord Privy Seal. One of his Majesty's principal Secretaries of State, &c.

To temporal Lords. To his Grace the Duke of, &c. To the most Honourable the Marquis of, &c. To the Right Honourable the Earl of, &c. To the Right Honourable the Lord Viscount, &c. To the Right Honourable the Lord, &c.

The eldest sons of Dukes, Marquisses, and Earls, enjoy, by the courtesy of England, the second title belonging to their father: thus, the eldest son of a Duke of Bedford, is called Marquis of Tavistock; of the Duke of Grafton, Earl of Euston; of the Earl of Macclesfield, Lord Viscount Parker, &c. and their daughters are called Ladies, with the addition of their Christian and Surname; thus, Lady Caroline Russel, Lady Augusta Fitzroy Lady Betty Parker, &c.

The younger sons of Dukes are in like manner called Lords; and those of Marquisses and Earls, together with all the children of Viscounts and Barons, are styled Honourable.

To a Baronet, Honourable; to a Knight, Right Worshipful; and to an Esquire, Worshipful.

Every Privy Counsellor, though not a nobleman, hath the title of Right Honourable.

All Ambassadors have the style of Excellency; as hath also the Lord Lieutenant of Ireland, and the Captain General of his Majesty's forces.

The Lord Mayor of London, during his mayoralty, hath the

title of Right Honourable; and the Sheriffs, during that office, have the title of Right Worshipful.

All Mayors of Corporations have the title of Esquires during their office.

For the Beginning of Letters.

To the King. Sire, or, May it please your Majesty.
To the Queen. Madam, or, May it please your Majesty.
To the Prince. Sir, or, May it please your Royal Highness.
To the Princess. Madam, or, May it please your Royal Highness.
To a Duke. My Lord, or, May it please your Grace.
To a Duchess. Madam, or, May it please your Grace.
To an Archbishop. May it please your Grace.
To a Marquis. My Lord, or, May it please your Lordship.
To a Marchioness. Madam, or, May it please your Ladyship.
To an Earl, Viscount, or Baron. My Lord, or, May it please your Lordship.
To their Consorts. Madam, or, May it please your Ladyship.
To a Bishop. My Lord, or, May it please your Lordship.
To a Knight. Sir, or, May it please your Worship.
To his Lady. Madam, or, May it please your Ladyship.
To a Mayor, Justice of Peace, Esquire, &c. Sir, or, May it please your Worship.
To the Clergy. Reverend Sir; Mr. Dean; Mr. Archdeacon; Sir, &c. as circumstances may require.

At subscribing your name, conclude with the same title you began with; as, My Lord, your Lordship's, &c.

To either House of Parliament, to Commissioners, and Bodies Corporate.

To the Right Honourable the Lords Spiritual and Temporal in Parliament assembled.

To the Honourable the Knights, Citizens, and Burgesses, in Parliament assembled.

To the Right Honourable the Lords Commissioners of the Treasury, or Admiralty.

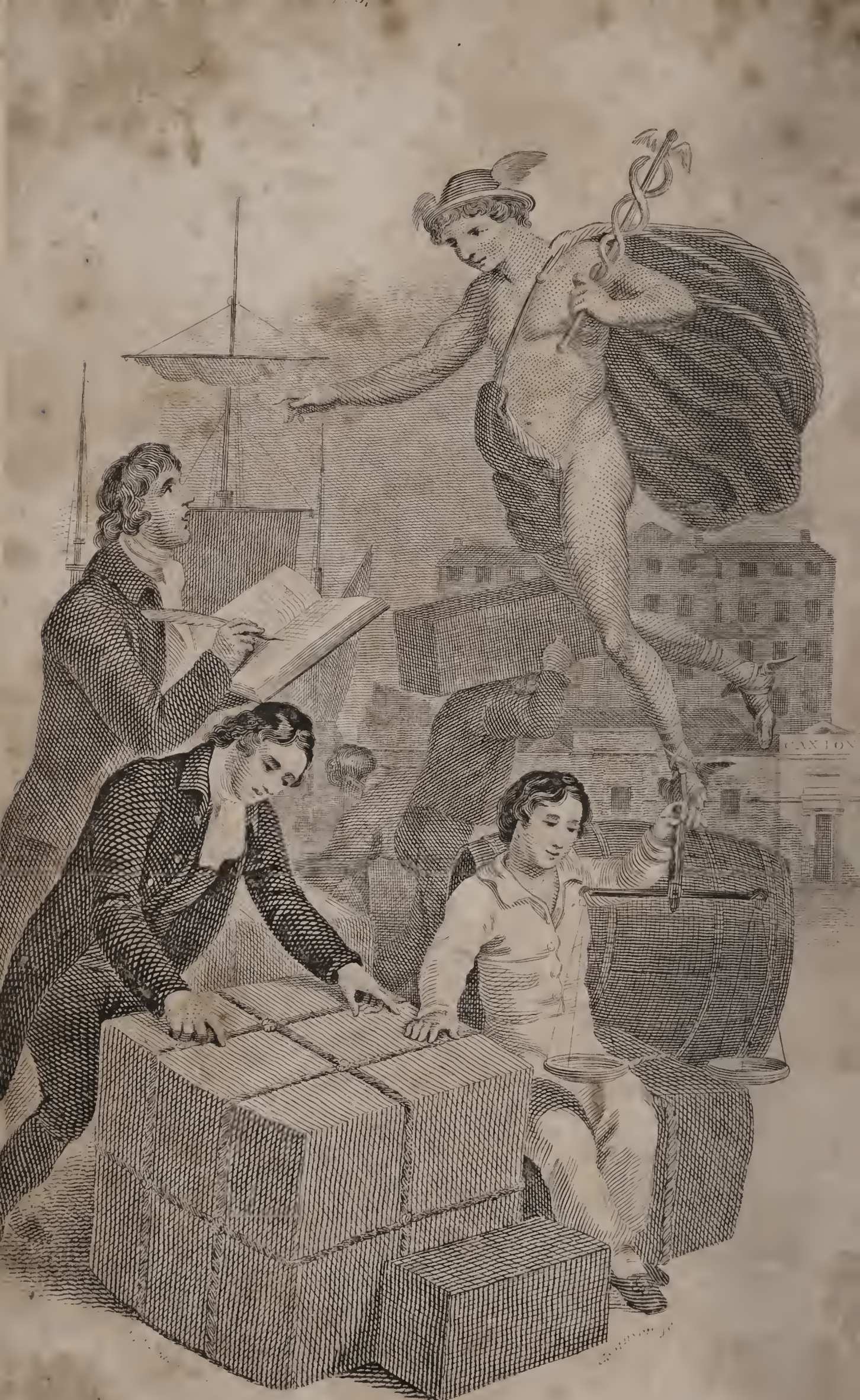
To the Honourable the Commissioners of his Majesty's Customs; Revenue of the Excise, &c.

To the Right Worshipful the Governors of Christ's Hospital.

To the Master, Wardens, and Court of Assistants, of the Worshipful Company of Drapers.

A TABLE *of* ABBREVIATIONS, *commonly used in Writing.*

A. B. *or* B. A. Bachelor of Arts.
A. D. *or* Anno Domini, the Year of our Lord.
A. M. Ante Meridiem, before noon; Anno Mundi, *or* the Year of the World.
A. M. Artium Magister, *or* Master of Arts.
A. R. Anno Regni, *or* the Year of the Reign.
B. D. Bachelor of Divinity.
Bart. Baronet.



TRADE & COMMERCE.

B. V. Blessed Virgin.
Cent. Centum, *or* Hundred.
Cl. Clericus, *or* Clerk.
Co. Company.
Cr. Creditor.
C. C. C. Corpus Christi College.
C. S. Custos Sigilli, Keeper of the Seal.
C. P. S. Custos Privati Sigilli, Keeper of the Privy Seal.
Dr. Doctor, *or* Debtor.
Do. Ditto, *or* the same.
D. Denarii, *or* Pence.
D. D. Doctor of Divinity.
e. g. Example.
F. R. S. Frater regalis Societas, Fellow of the Royal Society.
Ibid. ibidem, in the same place.
Id. idem, the same.
i. e. That is.
J. H. S. Jesus Hominum Salvator, Jesus the Saviour of Man.
Inst. Instant.
L. L. D. Doctor of Laws.
M. A. Master of Arts.
M. B. Bachelor of Physic.
M. D. Doctor of Physic.
MSS. Manuscripts.
N. B. Nota Bene, Mark well.
N. S. New Stile.
Obj. Objection.
O. S. Old Stile.
Per, By.
Per Cent. By the Hundred.
Philom. Philomathes, a Lover of Learning.
Philo Math. Philo Mathematicus, *or* a Lover of the Mathematics.
P. M. Post Meridiem, afternoon.
P. S. Postscript.
Q. Question, *or* Query.
q. d. Quasi Dicat, as if he should say.
q. l. Quantum Libet, *or* as much as you please.
q. s. Quantum Sufficit, *or* a Sufficient Quantity.
Reg. Prof. Regius Professor, *or* King's Professor.
Rt. Hon. Right Honourable.
S. A. Secundum Artem, According to Art.
St. Saint.
S. T. P. Sacre-Sanctæ Theologiæ, Professor of Divinity.
Vide, See.
Viz. That is to say.
Xtian. Christian.
Xt. Christ.

ARITHMETIC.

After Writing, the next necessary step towards qualifying a person for business is Arithmetic, a knowledge so necessary in all parts of life and business, that scarce any thing is done without it.

And first of Notation and Numeration.

In Notation we must observe, that all numbers are expressed by these ten figures following, viz.

1 2 3 4 5 6 7 8 9 0

Nine of these are called significant figures, to distinguish them from the cipher, which of itself signifies nothing; but, as it is placed in whole numbers, serves to increase the value of the next figure or figures that stand before it: as 3 is but three; but be-

fore the cipher, thus 30, the 3 becomes thirty, &c. We are to note, That every one, or any of the above nine figures, or digits, have two values; one certain, and another uncertain: the certain value, as when it stands alone by itself; the uncertain is, when joined or placed with other figures or ciphers; for when any one of these figures stands alone, it signifies no more than its own simple value; as 5 is but five, 4 but four, 6 but six, and 3 no more than three, &c. And this is the certain value of a figure. But when another figure or cipher is annexed, then they are increased in their value ten times; as 5, or five units or ones, to five tens, or fifty; 4 to four tens, or forty; and 3 to three tens, or thirty: as thus, 51, fifty-one; 42, forty-two; 34, thirty-four, &c. Again, if any of the said figures stand in the third place towards the left hand, they signify so many hundreds as they expressed units or ones: as 500, is five hundreds; 400, four hundreds; and 300, three hundreds, &c. If any of them possess the fourth place towards the left hand, they are so many thousands as they contain units; and so any or every figure increases in a ten-fold proportion, from the right hand to the left, according to the place it is found or stands in; so that 5 may be either five, or fifty; five hundred, or five thousand: in the first place, 5; in the second, 50; in the third, 500; in the fourth place, 5000, &c. The true value of figures in conjunction may be fully learnt and understood by the following table:

The Numeration Table.

12 C Thous. of Millions.	11 X Thous. of Millions.	10 Thous. of Millions.	9 C of Millions.	8 Tens of Millions.	7 Millions.	6 C of Thousands.	5 Tens of Thousands.	4 Thousands.	3 Hundreds.	2 Tens.	1 Units.
1	2	3	4	5	6	7	8	9	0	1	2
	1	2	3	4	5	6	7	8	9	0	1
		1	2	3	4	5	6	7	8	9	0
			1	2	3	4	5	6	7	8	9
				1	2	3	4	5	6	7	8
					1	2	3	4	5	6	7
						1	2	3	4	5	6
							1	2	3	4	5
								1	2	3	4
									1	2	3
										1	2
											1

Thousands of Millions.	Millions.	Thousands.	Units of Ones.
123	456	789	012
12	345	678	901
1	234	567	890
	123	456	789
	12	345	678
	1	234	567
		123	456
		12	345
		1	234
			123
			12
			1

For the easier reading of any number, first get the words at the head of the table by heart; as units, tens, hundreds, thousands, &c. and apply them thus: 75, five units, five, and 7 tens, seventy; that is seventy-five. Again 678; 8 units, eight; 7 tens, seventy; and 6 hundreds, six hundreds; that is, six hundred and seventy-eight. Once more, 3456; units, six; 5 tens, fifty; 4 hundreds, four hundreds; 3 thousands, three thousands; together, three thousand four hundred fifty-six. The fourth line of the table, viz. 123456789, may be read thus: one hundred twenty-three millions, four hundred fifty-six thousand, seven hundred and eighty-nine. But the manner of reading any number may be rendered more intelligible by stops, thus: make a comma after every third figure or cipher, beginning at the right hand, and so on towards the left, thereby distinguishing every third place into hundreds; as hundreds of units, hundreds of thousands, hundreds of millions, and hundred-thousands of millions, &c. And, for trial, let us read the first line of the table: where the last place in valuation is hundred-thousands of millions, and being pointed into periods, will stand thus, 123,456,789,012, and is to be read thus; one hundred twenty-three thousand, four hundred and fifty-six millions, seven hundred eighty-nine thousand (no hundreds) and twelve. Again, the following number, viz. 276,245,678,921,460, is to be read thus: 276 million of millions, 245 thousand of millions, 678 millions, 921 thousands, 460 units or ones; that is, two hundred and seventy-six million of millions, two hundred forty-five thousand six hundred seventy-eight millions, nine hundred twenty-one thousand, four hundred and sixty. The foregoing Table of Numeration is on the right hand distinguished into such periods, for the easier reading thereof.

Numbers to be read or written, viz.

96, Ninety-six
242, Two hundred and forty-two
7924, Seven thousand 9 hundred 24
54006, Fifty-four thousand and six
524707, Five hundred 24 thousand 707
4706240, Four million 706 thousand 240
62700472, Sixty-two millions 700 thousand 472
474960204, Four hundred 74 millions 960 thousand 204
4214007042, Four thousand 214 millions 7 thousand 42
44214800240, Forty-four thousand 214 millions 8 hundred thousand 240.

Of Numerical Letters.

Numbers were anciently expressed by Letters: and it is necessary to understand them, for the reader reading the dates of years frequently used in the title-pages of books, on funeral monuments, in Roman history, &c.

Numerical Table.

I. One	XV. Fifteen	XC. Ninety
II. Two	XVI. Sixteen	C. An Hundred
III. Three	XVII. Seventeen	CC. Two Hundred
IV. Four	XVIII. Eighteen	CCC. Three Hundred
V. Five	XIX. Nineteen	CCCC. Four Hundred
VI. Six	XX. Twenty	D. Five Hundred
VII. Seven	XXI. Twenty-one	DC. Six Hundred
VIII. Eight	XXV. Twenty-five	DCC. Seven Hundred
IX. Nine	XXX. Thirty	DCCC. Eight Hundred
X. Ten	XL. Forty	DCCCC. Nine Hundred
XI. Eleven	L. Fifty	M. One Thousand
XII. Twelve	LX. Sixty	MDCCCX. One Thousand Eight Hundred and Ten.
XIII. Thirteen	LXX. Seventy	
XIV. Fourteen	LXXX. Eighty	

ADDITION.

Is the collecting, and uniting together two or more numbers, or sums, so as their total value may be discovered or known. Herein we must always observe to set the numbers to be added orderly one under the other, that is, units under units, tens under tens, hundreds under hundreds, &c. as in the subsequent examples.

Addition of Numbers of one Denomination.

Yards.	Gallons.	Pounds.
24	756	57962
42	432	39744
68	578	67222
86	696	79674
24	422	2492
42	678	390
286	3562	247484

In addition of simple numbers, whether it be yards, gallons, pounds, or any thing else, remember to carry one for every 10 that you find in the right hand row, or rank of figures being units, to the next row of tens; and the like from the rank of tens to the row of hundreds, &c. and whatever it makes in the last row, you must set down, amount to what it will. Then in casting up each example, to know its total, I begin at the right hand, or unit's rank of the first example, and say, 2 and 4 is 6, and 6 is 12, and 8 is 20, and 2 is 22, and 4 is 26: in which row there are two tens, and 6 over; wherefore I set down 6 just under its own rank, and carry two to the next row, and say, two that I carry and 4 make 6, and 2 is 8, and 8 is 16, and 6 is 22, and 4 is 26,

and 2 is 28; and this being the last row, I set down the amount, viz. 28: so that the total number of yards is found to be 286. And the amount of the next or second example, is found by the same method to be 3562 gallons. And in the third and last example, the total number of pounds is found by the same way to be 247484. And so the total of any other example of the same kind, viz. simple numbers of any denomination, may be found. *Note*, That when any of the ranks amount to just 10, 20, 30, 40, 50, &c. then you must set down the 0 under its proper rank, and carry either 1, 2, 3, 4, or 5, according to the number of tens that you may find, to the next row.

Addition *of* Money.

4 farthings	make	1 penny
12 pence	make	1 shilling
20 shillings	make	1 pound

Note, *l.* stands for pounds; *s.* for shillings; *d.* for pence; and *q.* for farthings.

Observe, that pounds be set directly under pounds, shillings under shillings, pence under pence, and farthings under farthings.

But before you proceed, get this table of pence by heart, thus, 30*d.* is 2*s.* 6*d.*—then 60*d.* is 5*s.*—again, 40*d.* is 3*s.* 4*d.* &c.

Pence Table.

d.		*s.*	*d.*	*d.*		*s.*	*s.*		*l.*	*s.*
20	is	1	8	24	is	2	30	is	1	10
30	—	2	6	36	—	3	40	—	2	0
40	—	3	4	48	—	4	50	—	2	10
50	—	4	2	60	—	5	60	—	3	0
60	—	5	0	72	—	6	70	—	3	10
70	—	5	10	84	—	7	80	—	4	0
80	—	6	8	96	—	8	90	—	4	10
90	—	7	6	108	—	9	100	—	5	0
100	—	8	4	120	—	10	110	—	5	10
110	—	9	2	132	—	11	120	—	6	0
120	—	10	0	144	—	12	130	—	6	10

An hundred yards of ferretting, one penny half-penny the yard.

In the table 100*d.* is — — — — 8*s.* 4*d.*
And half the sum is — — — — 4*s.* 2*d.*

Answer, 12*s.* 6*d.*

If one pound of any thing cost 7*d.* halfpenny, what will 280*lb.* weight cost after that rate?—performed by addition thus:

		l.	*s.*	*d.*
200	sixpences make 100*s.* - - -	5	0	0
80	sixpences make - - - - -	2	0	0
200	pence - - - - - - - - -	0	16	8
80	pence is - - - - - - - - -	0	6	8
200	halfpence is 100 pence, or -	0	8	4
80	halfpence make 10 groats, or	0	3	4
	Price of the goods £	8	15	0

Money owing and Money received, as follows.

(1)

		l.	*s.*	*d.*
Owing to	Mr.——	4	12	6
	Mr.——	7	6	9
	Mr.——	4	12	0
	Mr.——	6	16	7
	Mr.——	5	2	6
	Mr.——	4	17	3
	Mr.——	6	7	0
	Mr.——	5	16	4
	£	45	10	11

(2)

		l.	*s.*	*d.*
Received from	Mr.——	46	10	9
	Mr.——	79	16	0
	Mr.——	22	18	3
	Mr.——	66	12	4
	Mr.——	90	16	0
	Mr.——	84	17	6
	Mr.——	24	12	0
	Mr.——	60	10	0
	£	476	12	10

I begin and say, 4 and 3 is 7, and 6 is 13, and 7 is 20, and 9 is 29, and 6 makes 35*d.* now, according to the table, 30*d.* is 2*s.* 6*d.* and 5*d.* makes 2*s.* 11*d.* I set down 11 exactly under the rank of pence, and say 2*s.* that I carry (which I do to the rank of shillings) and 6 is 8, and 7 is 15, and 7 makes 22, and 2 is 24, and 6 is 30, and 2 makes 32, and 6 makes 38, and 2 makes 40; and now being come to the top of the sum, and it making 40, I come down with the ten shillings, 40 and 10 is 50, and 10 is 60, and 10 is 70, and 10 is 80, and 10 makes 90*s.* and the table informing me that 90*s.* is 4*l.* 10*s.* I therefore set down the remaining 10*s.* just under the row of shillings, and carry 4*l.* to the pounds, saying, 4 that I carry, and 5 is 9, and 6 is 15, and 4 is 19, and 5 is 24, and 6 is 30, and 4 is 34, and 7 is 41, and 4 is 45*l.* so that the total of the several sums of money due to those several persons amounts to 45*l.* 10*s.* 11*d.* as in the example.

In the second example of money received, I begin at the right-hand, and say, 6 and 4 is 10, and 3 is 13, and 9 makes 22; and 22*d.* being 1*s.* 10*d.* I set down 10, and carry 1 to the shillings, saying, 1 that I carry and 2 is 3, and 7 is 10, and 6 is 16, and 12 is 8, and 8 is 26, and 6 makes 32; then I come down

with the tens, saying, 32 and 10 makes 42, &c. and I find at the bottom it comes to 112*s*. which making 5*l*. 12*s*. I set down 12*s*. and carry 5*l*. to the pounds, saying, 5*l*. that I carry and 4 is 9, &c. I find at the top it amounts to 36, wherefore I set down 6 exactly under its own rank, viz. the rank of units or pounds, and carry 3 for the tens that are in 30 (for at all times in the first denomination of Addition, whether of money, weight, or measure; that is, in the denomination of pounds, tens, or yards, you must cast them up as sums of one denomination; that is, for every ten carrying 1 to the next, &c.) saying, 3 that I carry and 6 is 9, and 2 is 11, and 8 is 19, &c. and I find then at the top it comes to 47; wherefore I set down 47 before the 6, and the total amounts to 476*l*. 12*s*. 10*d*.

Addition *of* Avoirdupois Weight.

By this weight are weighed all kinds of grocery goods or wares; as tobacco, sugars, fruit, and drugs; as also flesh, butter, cheese, allum, tallow, iron, brass, copper, lead, tin, pewter, pitch, tar, rosin, hemp, flax, soap, salt, &c.

A Table of this Weight is as follows, viz.

4	quarters make 1 drachm, marked	*dr.*
16	drachms 1 ounce - - - - -	*oz.*
16	ounces 1 pound - - - - - -	*lb.*
28	pounds 1 quarter of an hundred weight - - - - - - - - -	*qrs.*
4	quarters 1 hundred weight - -	*cwt.*
20	hundred weight 1 ton - - - -	*T.*

Examples.

	4	28		4	28		4	28		16	16
Cwt.	*qrs.*	*lb.*	*Cwt.*	*qrs.*	*lb.*	*Cwt.*	*qrs.*	*lb.*	*lb.*	*oz.*	*dr.*
5	1	16	24	2	12	9	1	16	24	11	12
4	2	24	42	2	0	4	3	26	42	14	15
6	3	6	16	1	12	7	1	0	64	10	11
7	1	12	25	3	24	5	3	27	29	9	10
9	0	20	19	0	20	4	3	2	16	12	13
6	2	0	26	1	22	2	2	2	27	13	14
39	3	22	155	0	6	34	3	17	206	9	11

In the first example, 28, the number of pounds contained in a quarter of a hundred weight, is placed over the column of pounds; now that column, when added up, makes 78, which contains two 28's, and 22 over, wherefore I set down 22 under the column of pounds, and carry 2 to the column of quarters, and so on.

Note, That in weighing at the water-side, or elsewhere, they do not weigh by the ton, though some goods are sold by it, as iron, logwood, cheese, &c. but by the hundred, quarters, and pounds, which are afterwards reduced to and computed by tons.

Addition *of* Troy Weight.

By this weight are weighed jewels, gold, silver, pearls, and medicines, and the usual denominations are pounds, ounces, penny weights, and grains, as in the following table, viz.

24 grains make 1 pennyweight;
20 pennyweights — 1 ounce; and
12 ounces — — — — 1 pound troy.

Examples.

Total weight of six ingots of silver, each weighing as follows:

		12	20	24		12	20	24		20	24
No.		*lb.*	*oz.*	*dwt.*	*gr.*	*lb.*	*oz.*	*dwt.*	*gr.*	*oz.*	*dwt.*	*gr.*
1	wt.	4	5	12	10	14	6	10	11	204	10	14
2		5	4	16	17	24	10	11	12	96	7	17
3		3	11	19	20	21	6	4	17	100	11	12
4		4	6	7	12	22	10	12	14	56	16	20
5		5	1	11	12	16	11	12	13	212	10	23
6		4	11	12	13	22	7	6	17	96	19	12
		28	6	0	12	123	4	18	12	767	17	2

How to prove Addition.

In all additions, whether simple or compound, the readiest method of proof is, to cast the same downwards, (beginning at (the top, as you did the same upwards,) and if that operation produces the same total, the work is most probably right.

A Table *of* Apothecaries' Weight.

20 grains make 1 scruple,
3 scruples — — — — 1 drachm,
8 drachms — — — — 1 ounce,
12 ounces — — — — 1 pound.

By these weights they compound their medicines; but they buy and sell their drugs by avoirdupois weight.

Cloth Measure.

4 nails, or 9 inches,—1 qr. of a yard,
4 qrs. or 36 inches,—1 yard,
5 qrs. or 45 inches,—1 ell English,
3 qrs. or 27 inches,—1 ell Flemish,
6 qrs. or 54 inches,—1 ell French.

A Table of Wool Weight.

Note, 7lb. make 1 clove—2 clove, or 14lb. 1 stone—2 stone or 28lb. 1 todd—6 todd and ½, 1 wey, or 182lb.—2 wey, or 364lb. 1 sack—and 12 sack one last, or 4368lb.—240lb. 1 pack of wool.

Note, That 1 lb. 2 oz. 12 dwt. troy, is equal to a pound avoirdupois; and a pound troy is about 13 oz. 2½ dr. avoirdupois.

		l.	*s.*	*d.*
A pound weight troy	of silver, is worth	3	2	2
A pound wt. avoirdupois		4	15	3

100*l.*	in gold	1lb.	11¾oz.	Avoirdupois Weight
	in silver	26	4	

A pound Avoirdupois is heavier than a pound Troy; but an ounce Troy is heavier than an ounce Avoirdupois.

A Table of Liquid Measure.

Liquid measure is of two sorts, viz. one for wine, brandy, &c. and the other for beer and ale.

(See page 422, Note.)

Wine, &c.

8 pints	1 gallon	2 hogsheads	1 pipe or butt
42 gallons	1 tierce	2 pipes or butts	1 tun, or
63 gallons	1 hogshead	252 gallons.	
84 gallons	1 puncheon		

Note, That sweet oil has 236 gallons to the tun; but oil from Greenland has 352 gallons to the tun.

Note, The wine gallon contains 231 cubic or solid inches, by which all liquids are measured, except beer and ale.

Beer Measure.

8 pints	1 gallon	2 kilderkins	1 barrel, or 36 gallons
9 gallons	1 firkin	1 barrel and a half, or 54 gallons,	
18 gallons	1 kilderkin	1 hogshead	

Ale Measure.

8 pints	1 gallon	2 kilderkins	1 barrel, or 32 gallons
8 gallons	1 firkin of ale, soap, or herrings	1 barrel and a half, or 48 gallons,	1 hogshead
2 firkins	1 kilderkin		

Note, The beer and ale gallon are the same, viz. 282 solid inches; but with this difference, *i. e.* the barrel of beer contains 1228 cubic inches, or four gallons more than the barrel of ale.

Dry Measure.

2 pints 1 quart
2 quarts 1 pottle
2 pottles 1 gallon
2 gallons 1 peck
4 pecks 1 bushel land measure
5 pecks 1 bushel water measure
4 bushels 1 comb, or half-quarter
2 combs 1 quarter
4 quarters 1 chaldron
5 quarters 1 wey
2 weys 1 last, or 10 quarts
4 fatts, or vatts, or 36 bushels of sea-coal, 1 chaldron; and 21 chaldrons is accounted a score in the river Thames

Salt and sea-coal are heaped, or else there are five pecks to the bushel.

Note, By an act passed anno 1712, the bushel is 2178 cubic inches, and a gallon of this measure is $272\frac{1}{4}$ cubic inches.

(See page 422, Note.)

Long Measure.

3 barley-corns 1 inch
12 inches 1 foot
3 feet 1 yard
3 feet 9 inches 1 ell English
5 feet a geometrical pace
5 yards and a half 1 pole, perch, or rod
6 feet 1 fathom, or 2 yards
40 poles, or 220 yards, 1 furlong
8 furlongs 1 mile, or 1760 yards
3 miles 1 league

In a Mile, are

8 furlongs
320 poles
1760 yards
5280 feet
63360 inches
190080 barley corns

Land Measure.

5 yards and a half, 1 pole, perch, or rod
40 poles make 1 furlong, or quarter of an acre
160 poles in length and 1 in breadth, is 1 acre
80 poles in length and 2 in breadth, 1 acre; and
40 poles in length and 4 in breadth, 1 acre
4 poles in length make 1 chain
10 chains in length and 1 in breadth, make 1 acre

Time.

60 seconds 1 minute
60 minutes 1 hour
24 hours 1 natural day
7 days 1 week
4 weeks 1 month
13 months, 1 day, and 6 hours, 1 Julian year

In a Year, are

31,557,600 seconds
525,960 minutes
8,766 hours
365 days 6 hours

Note, The solar year is divided into 12 calendar months, which contain 365 days, according to this good old verse, viz.

Thirty days hath September,
April, June, and November;
February hath twenty-eight alone,
And all the rest have thirty-one.
Except in Leap-year, then's the time
When February's days are twenty-nine.

SUBTRACTION

Teaches to take a lesser number out of a greater, and shews the remainder, excess, or difference.

Place the lesser number under the greater, draw a line under them, and, beginning at the right hand, take each figure in the lower line from the figure under which it stands; but if the figure in the lower line is greater than that in the upper, then, in numbers of one denomination, ten must be borrowed and added to the figure in the upper line; then take the figure in the lower line from the sum, and write down the remainder, but for every ten thus borrowed, one must be paid or added to the next left-hand figure in the lower line.

Example. Suppose Mr. Andrews owes to Mr. Baker, - - - 323*l*.
whereof Mr. A. hath paid Mr. B. the sum of - - - - - - - 146*l*.
in part. What remains due to Mr. Baker?

Answer, 177*l*.

Here the lesser number 146, stands under the greater 323; and to find the remainder, or sum remaining due, I say, 6 from 3 I cannot, but 6 from 13 (for you borrow 10, and add it to the figure or cipher that stands directly over the figure you subtract,) and there remains 7; then 1 that I borrow and 4 is 5, (for as I borrowed 10 in the inferior place, which is equal to 1 in the superior, so I must now pay the same;) therefore I say, 5 from 2 I cannot, but 5 from 12 (borrowing 10, and adding it to the figure 2, as above directed,) and there remains 7: then 1 that I borrowed and 1 is 2, from 3, the figure above it, and there remains 1, and so the example is done: and by it is shewn, that *A* still owes *B* 177 pounds: for a proof of its verity, add 177, the remainder, to 146, the lesser of the two given numbers, and it will make 323, being the same with the greater number or sum of money first due, and therefore is a sure proof of the truth and certainty of the rule. And as subtraction is proved by addition, so may addition be proved by subtraction; for if the two aforesaid numbers, viz. 323 and 146, are added, their total is 469; from which if you deduct 146, the remainder will be the greater number; or if you subtract 323 from the said 469, the remainder will be 146, the lesser number.

All examples in subtraction of numbers of one denomination are performed as above, they not varying at all; but, for the better explanation: A sheep-master has 6904 sheep, and takes out of them 2490 to dispose of at market; how many does he leave behind? To know this, set them down thus:

From 6904—the greater number,
Take 2490—the lesser number.

Answer, 4414

Here I say 0 from 4, and there remains 4; then 9 from nothing (or 0) I cannot; but 9 from 10 (adding to the 0) and there remains 1, and one that I borrowed and 4 makes five, and 5 from 9, and there remains 4; and lastly 2 from 6, and there remains also 4 (for I borrowed none, and therefore there is no occasion of paying,) so that he leaves behind him just 4414: which added to the number he takes to market, makes 6904, and shews the deduction to be true, and the answer right.

More examples.

	l.	*Yards.*	*Gallons.*	*Pounds.*
From	4796	3700	47200	479672
Take	2929	1976	31976	97694
	1867	1724	15224	381978
Proof	4796	3700	47200	479672

The distance of time since any remarkable event, may be found by subtracting the date thereof from the date of the present year.

Examples.

I.—1821
1666 the fire of London
Since 155 years

II.—1821
1215 Magna Charta
Since 606 years

III.—1821
1583 the Spanish Invasion
Since 233 years

IV.—1821
1605 gunpowder treason
Since 216 years

Subtraction of divers Denominations.

Here if the figure or figures, placed in the lower line, exceed those in the upper, then as many units must be borrowed as make a unit or one, of the next superior denomination; and one must be carried to the next left-hand place in the line, as before.

Of Money.

	20	12	
	l.	*s.*	*d.*
Due - -	9	2	6
Paid - -	6	16	4
Rem. due	2	6	2

Suppose Mr. Campion owes Mr. Darnell 9*l.* 2*s.* 6*d.* and Mr. C. has paid Mr. D. in part 6*l.* 16*s.* 4*d.* what remains due to Mr. Darnell? Answer, there is due to Mr. Darnell 2*l.* 6*s.* 2*d.*

		20	12	
		l.	*s.*	*d.*
Sold for - - -		242	16	$3\frac{3}{4}$
Paid in part	174	12	$6\frac{1}{2}$	
Answer	68	3	$9\frac{1}{4}$	

Again, Mr. Edwards sells to Mr. Francis, Spanish wool to the value of 242*l.* 16*s.* $3\frac{3}{4}$*d.* and pays present money the sum of 174*l.* 12*s.* $6\frac{1}{2}$*d.* what money remains unpaid from Mr. Francis? Answer, 68*l.* 3*s.* $9\frac{1}{4}$*d.*

In the first of these examples I say, 4*d.* from 6*d.* and there remains 2*d.* then 16*s.* from 2*s.* I cannot, but borrowing one integer of the next denomination, or 1 pound, which is 20*s.* I say 16 from 20 and there rests 4, and adding thereto the number 2, it makes 6; wherefore I put down 6 in the place of shillings, and say, 1 that I borrowed and 6 is 7; now 7*l.* from 9*l.* there remains 2*l.* so the money resting due to Mr. Darnell is 2*l.* 6*s.* 2*d.* as in the example.

In the second example I say, 2 farthings (or an halfpenny) from 3 farthings, and there remains 1 or $\frac{1}{4}$, which I set down in its proper place, viz. under the denomination of farthings; then 6 from 3 I cannot, but 6 from 12 (as marked over the denomination) and there remains 6*d.* and 3*d.* over it makes 9*d.* which I place under the line in its right place, viz. of pence; then 1 that I borrowed (that is, 1 shilling,) and 12 is 13; 13*s.* from 16*s.* and there rests 3, which I likewise set down under its own rank; then 4 from 2 I cannot, but 4 from 12 (borrowing 10) and there rests 8; then 1 that I borrowed and 7 makes 8; 8 from 4 I cannot, but 8 from 14, and there remains 6: so that the sum remaining due is 68*l.* 3*s.* $9\frac{1}{4}$*d.* as in the work. For its proof, you must add the remainder 68*l.* 3*s.* $9\frac{1}{4}$*d.* to the lesser or under sum, 174*l.* 12*s.* $6\frac{1}{2}$*d.* and it makes 242*l.* 16*s.* $3\frac{3}{4}$*d.* the sum first due, and is a proof of the work being right.

More Examples for Practice.

	10	20	12		10	20	12		10	20	12
	l.	*s.*	*d.*		*l.*	*s.*	*d.*		*l.*	*s.*	*d.*
Due - - -	174	6	$6\frac{1}{4}$		74	10	4		2471	7	0
Paid - -	97	2	$4\frac{3}{4}$		29	12	9		1976	16	$6\frac{1}{2}$
Remains	77	4	$1\frac{1}{2}$		44	17	7		494	10	$5\frac{1}{2}$
Proof - -	174	6	$6\frac{1}{4}$		74	10	4		2471	7	0

Sometimes a sum owing may be paid at several times; then the several payments must be added together, and their total deducted from the sum first due; as in this and the examples following.

Owing	266*l.*
Paid at several times	20
	15
	30
	90
	17
	24
	60
Paid in all	256
Remains due	10
Proof	266

	l.	*s.*	*d.*
More due	249	12	0
Received at several times	24	12	6
	9	14	6
	20	0	3
	16	16	6
	22	10	2
	13	12	6
	7	16	4
Received in all	115	2	9
Remains due	134	9	3
Proof	249	12	0

	l.	*s.*	*d.*
Received	100	10	0
Paid to several persons.	6	16	0
	10	0	0
	5	12	6
	20	10	0
	7	9	6
	9	8	6
	7	12	6
Paid in all	67	9	0
Remains in cash	33	1	0
Proof	100	10	0

Avoirdupois Weight.

		20	4	28		4	28		16	16
	tons.	*cwt.*	*qrs.*	*lb.*		*cwt.*	*qrs.*	*lb.*	*lb.*	*oz.*	*dr.*
From	44	12	1	10		246	2	12	146	2	10
Take	39	14	2	6		164	3	22	97	10	12
	4	17	3	4		81	2	18	48	7	14
Proof	44	12	1	10		246	2	12	146	2	10

Troy Weight.

		12	20	24		20	24
	lb.	*oz.*	*dwt.*	*gr.*	*oz.*	*dwt.*	*gr.*
From	462	4	10	11	1247	10	13
Take	196	9	6	16	975	16	17
Remains	265	7	3	19	271	13	20
Proof	462	4	10	11	1247	10	13

MULTIPLICATION.

Multiplication may be accounted the most serviceable rule in arithmetic; it performs the work of many additions in the most compendious manner, bringing numbers of great denomination into small; as pounds into shillings, pence, or farthings; tons into hundreds, quarters, pounds, ounces, &c. and by knowing the value of one thing, we find the value of many.

In multiplication observe these three terms; multiplicand, multiplier, product.

1. The multiplicand, (generally the greater of the two numbers,) is the number to be multiplied.

2. The multiplier, (generally the lesser of the two numbers,) is the number to multiply with.

3. The product, is the result of the work, or the answer to the question. But before any thing can be done to the purpose, it is necessary to learn the following table perfectly by heart.

The Multiplication Table.

1	2	3	4	5	6	7	8	9	10	11	12
2	4	6	8	10	12	14	16	18	20	22	24
3	6	9	12	15	18	21	24	27	30	33	36
4	8	12	16	20	24	28	32	36	40	44	48
5	10	15	20	25	30	35	40	45	50	55	60
6	12	18	24	30	36	42	48	54	60	66	72
7	14	21	28	35	42	49	56	63	70	77	84
8	16	24	32	40	48	56	64	72	80	88	96
9	18	27	36	45	54	63	72	81	90	99	108
10	20	30	40	50	60	70	80	90	100	110	120
11	22	33	44	55	66	77	88	99	110	121	132
12	24	36	48	60	72	84	96	108	120	132	144

This table is so plain and easy, that there is no need of direction; for the product of any two figures will be found in that square which is on a line with the one and under the other; 7 times 8 is 56, and 8 times 7 is 56, &c.

Example I.

How many is 3 times 472? Which being set down in the margin, I say 3 times 2 is 6, which place under 3 the multiplier; then 3 times 7 is 21; set down 1 under 7, and carry 2 for the tens, as in *Addition of one Denomination;* then three times 4 is 12, and 2 carried is 14; which set down, and the product is 1416: that is, 3 times 472 makes so much; which may be proved by *Addition,* by setting down 472 three times in additional order, and casting it up, which makes the assertion good in the second definition. Likewise the foregoing example agrees with the first definition; for as three times 472 makes 1416, so doth 472 times three make the same, viz. 1416.

472
3
1416

Example II.

How many are produced by multiplying 742 by 4?

742 *Multiplicand*
4 *Multiplier*
2968

Here I say, 4 times 2 is 8, and 4 times 4 is 16; set down 6, and carry 1; and 4 times 7 is 28, and 1 is 29, which set down, so the whole product is 2968.

More Examples.

Multiplicand	7420	444	7460	90704	56789
Multiplier	5	6	7	8	9
Product	37100	2664	52220	725632	511101

Compound Multiplication

Is when the multiplier consists of two, three, or more figures or ciphers.

And here you must begin with that figure which is in the place of units of the multiplier, and go through the whole multiplicand, by multiplying each figure of it first by the said unit figure, then by the next, then by the third, &c. to the last; always remembering to place the first figure of every product or line exactly under the figure you multiply by; and then add the several lines or products together, which, so collected, give the total product required, as in the examples following, viz.

Example I.

How many are 23 time 7426? First I begin with the unit figure 3 in the multiplier, saying 3 times 6 is 18; 8 (which I set directly under 3, by which I multiply) and carry 1; then 3 times 2 is 6, and 1 is 7; then 3 times 4 is 12, 2 and carry 1; then 3 times 7 is 21, and 1 is 22; and so I have done with the first figure of the multiplier. Then I go to the next; that is 2, and twice 6 is 12, 2 and I carry 1, (which 2 is placed in a direct line under 2 the multiplying figure; then twice 2 is 4,

7426
23
22278
14852
170798

and 1 is 5, then twice 4 is 8; and lastly, twice 7 is 14, which I set down: then I add the two products together, saying 8 is 8, &c. and the total is the true product or result of the multiplication.

Example II.

What is the product of 527527
Multiplied by 285

2637635
4220216
1055054

150345195

When ciphers are intermixed with figures in the multiplier, then multiply the figures as above; and when you come to a cipher in the multiplier, then set down another cipher exactly and perpendicularly under it; then begin the multiplicand again with the next figure to the cipher in the multiplier, and go through it in the same line, placing the first figure of that product next the cipher, towards the left hand; but then heed must be taken that the next figure or cipher of the next line must be set down one degree farther towards the left hand, and not immediately under the last figure set down to the cipher: as in the following examples may be fully understood.

24393	784371	327586
402	23604	6030
48786	3137484	9827580
975720	47062260	19655160
9805986	2353113	1975343580
	1568742	
	18514293084	

When you have a cipher or ciphers in the multiplier at the beginning towards the right hand, then set it, or them, backwards from the place of units towards the right hand; and when you have multiplied by the figure or figures, annex the cipher or ciphers, as in these examples.

4762	47962	4632
70	400	2600
333340	19184800	27792
		9264
		12043200

If you have ciphers both in the multiplicand and multiplier, then neglect the ciphers in both, and multiply by the figures, and annex the ciphers at last:

As in these Examples.

42600	42300	376400
220	12000	2400
852	846	15056
852	423	7528
9372000	507600000	903360000

Thus for direction in the manner how to multiply: the next will be to shew the uses of Multiplication in real business, and how to apply it on proper occasions, viz.

1. Suppose you want to know how many half crowns there are in 246*l.* you know that 8 half crowns make 1*l.* wherefore set them down thus:

246*l.*
Multiply by 8

Answer 1968

Again, in 1968 half crowns, how many pence?

30

59040

2. If you want to know the contents of a large table, 34 feet long, and 4 feet wide, multiply 34 the length by 4 the width, and the answer will be 136 square feet, the true contents of such table.

3. If I know the value of a yard of narrow cloth to be 12 shillings, what is the value of 220 yards of the said cloth in shillings?

220
Multiply by 12

2640 shillings, or 132 pounds.

If the wages of one seaman be 23 shillings a month, what is the wages of 250 seamen for the same time?

250
Multiply by 23

750
500

Answer 5750 shillings, or 287*l.* 10*s.*

Multiplication of Money.

Multiplication of Money has great affinity to Addition of Money; the same method being taken in carrying from one denomination to the next, viz. from farthings to pence, from pence to shillings, and from shillings to pounds.

The general rule is always to multiply the price by the quantity.

Example I.

	l.	*s.*	*d.*
Multiply	7	12	6
(or 6 pieces of cloth, at 7*l.* 12*s.* 6*d.* per piece) by			6
	45	15	0

Here I say 6 times 6 is 36 pence, which is just 3*s.* I set down 0 in the place of pence, and carry 3*s.* to the place of shillings, (exactly the same as in Addition of Money;) then 6 times 12 is 72, and 3 is 75*s.* or 3*l.* 15*s.* wherefore I set down 15 in the place of shillings, and carry 3 to the pounds; then 6 times 7 is 42, and 3 is 45*l.* So the whole amount of the six cloths, at 7*l.* 12*s.* 6*d.* per cloth, is 45*l.* 15*s.* as in the work, which is very concise.

Example II.

How much is 9 times 13*s.* 4*d.*

			9
£6	0	0	

In this example I say, 9 times 4 is 36*d.* or 3*s.* I set down 0, and carry 3; then 9 times 3 is 27, and 3 makes 30; I set down 0, and carry 3, (as in Multiplication of simple numbers,) then 9 times 1 is 9, and 3 is 12; which is in the place of tens of shillings, and being halved, make just 6*l.*

Example III.

Once more: What comes 12 gallons of wine to, at 5*s.* 4*d.* per gallon?

	s.	*d.*
	5	4
		12
£3	4	0

Here I say, 12 times 4 is 48, 0 and carry 4; then 12 times 5 is 60, and 4 is 64*s.* or 3*l.* 4*s.* &c.

The next degree or step of advance in this way of reckoning is of quantities exceeding 12, even to 12 times 12, or 144; all which, as far as 144, are found in that excellent table, the Table of Multiplication; which is a ready help to all purposes of reckoning, and particularly in this way: and that you may proceed with dexterity, you must be very ready in the said table, that you may be immediately apprehensive what component parts hit your quantity proposed, or pretty near it, (for any quantity below 12 needs no recollection at all, as in two of the examples foregoing,) and then work accordingly. If the quantity be 15 yards, I readily know that 3 times 5 is 15; and therefore 3 and 5, or 5 and 3, are to be my multipliers: If the quantity were 21, then 3 and 7, or

7 and 3, would be multipliers; if 30, then 5 and 6, or 6 and 5, also 3 and 10, or 10 and 3; if 45, 48, 56, 66, 72, 96, &c. were the quantities, then 5 and 9, 6 and 8, 7 and 8, 6 and 11, 6 and 12, and 8 and 12, &c. are to be my multipliers, and exactly hit the several quantities of which they are component parts; and examples of this kind have two multiplications for their solution.

When the quantity proposed is a number irregular, or such a number that no two numbers in the table can be found to answer it, then we must multiply by two such numbers as come pretty near it, as is said above; and for the number wanting to make up the number or quantity proposed, multiply the given price of one by the number that is wanting, which will make three products by three multiplications; which last product must be added to the foregoing products resulting from the two multiplications, and the total will be the answer.

And first, I shall shew examples of the second step, viz. of regular quantities that exceed 12, and are precisely answered at two multiplications, such as mentioned above, viz.

What come 15 yards of muslin to, at - - - - - - - - - - - per yard?

s. *d.*
3—5
3

110—3
5

2—11—3

Here 3 times 5 is 15*d.* or 1*s.* 3*d.* set down 3 and carry 1*s.* then 3 times 3 is 9, and 1 is 10*s.* so the first product is 10*s.* 3*d.* which multiply by 5, saying 5 times 3 is 15*d.* or 1*s.* 3*d.* 3 and carry 1; then 5 times 10 is 50, and 1 is 51*s.* or 2*l.* 11*s.* So the amount of 15 yards, at 3*s.* 5*d.* per yard, is 2*l.* 11*s.* 3*d.* And demonstrable thus, viz. If 10*s.* 3*d.* be the value of 3 times 3*s.* 5*d.* then 5 times the value of 10*s.* 3*d.* must of necessity be 15 times the value of 3*s.* 5*d.* because 5 times 3 is 15. And its truth may be proved by Addition and Multiplication, thus: Set down 3*s.* 5*d.* three times in additional order, and put the three lines together, and the total of them multiply by 5, as before, and the answer will be the same. Or set down 17*s.* 1*d.* (the product of 3*s.* 5*d.* multiplied by 5) three times also, and add them together, and the total will be exactly the same with the result of Multiplication; as in the following specimens of work:

(1)

s.	*d.*
3	— 5
3	— 5
3	— 5
10	— 3
	5
£2	— 11 — 3

s.	*d.*
3	— 5
	5
17	— 1

(2)

s.	*d.*
17	— 1
17	— 1
17	— 1
£2	— 11 — 3

Here the first of these two proofs is worked by Addition and Multiplication, and the second by Multiplication (as per margin) and Addition. Also,

By this we see, that in all examples under this head, we are to pitch on two numbers (for multipliers) in the table; which multiplied together, make the quantity proposed; and then we are to multiply the price by one of the numbers (it signifies not by which first) and then that product is to be multiplied by the other number, and the second or last product will be the answer.

Again, What is the value of 21 gallons of brandy,
at - - 7*s.*—9*d.* per gallon?

7 and 3

2—14—3
3

£8— 2—9

In this example I say, 7 times 9 is 63*d.* or 5*s.* 3*d.* I set down 3 and carry five; then 7 times 7 is 49, and 5 is 54*s.* or 2*l.* 14*s.* So the first product is 2*l.* 14*s.* 3*d.* which I multiply by 3, and that produces the last product or answer, 8*l.* 2*s.* 9*d.*

Now follow a few more examples of this sort, without any verbal directions, because those already given are sufficient.

Example 3.

What comes 30 ells of holland to, *s.* *d.*
at - - - - 3—7

10 and 3

1—15—10
3

Ans. £5— 7— 6

Example 4.

56 bushels of wheat,
at - - 4*s.*—9*d.*

7 and 8

1—13—3
8

Ans. £13— 6—0

Example 5.

45 pounds of raw silk,
at - - - - - 15*s.*—4*d.* per *lb.*

5 and 9

3—16—8
9

Ans. £34—10—0

Example 6.

108*lb.* of indigo lahore,
at - - - - 7*s.*—8*d.*

9 and 12

3—9—0
12

Ans. £41—8—0

Example 7.

	s.	d.
72 broad pieces,	23—	6 each
		12 and 6
	14—	2—0
		6
Ans.	£84—	12—0

Example 8.

96 *Cwt.* of currants,
at £2—13—6 per *C.*
8 and 12

	21—	8—0
		12
Ans.	£256—	16—0

The next gradation of advance is of quantities irregular, or of numbers that are not to be answered precisely at two multiplications; in this case there arises no increase of difficulty, but it is as easy as the example foregoing. Only here you will have an addition of one line more, occasioned by bringing down the price of one to be added to the last product; or else a line more made by multiplying the price of what is defective or wanting in the number by two multiplications, to make up the proposed quantity complete; as it may be of 2, 3, 4, 5, &c. as by the subsequent examples may be seen and understood.

Example 1. What is the product of 2*l.* 13*s.* 6*d.* multiplied by 39?

£2—13—6 × 3
6 and 6

16—	1—	0
		6
96—	6—	0
8—	0—	6
£104—	6—	6

Here I find that 6 multiplied by 6, makes 36; which is within 3 of the quantity proposed; wherefore I multiply by 6, and that product again by the other 6; the last product is 96*l.* 6*s.* which is the value of 36: but we want to know the value of 39; wherefore I multiply the price of one, viz. 2*l.* 13*s.* 6*d.* by 3 that is defective or wanting to make up 36 to 39, saying, 3 times 6 is 18*d.* &c. And finding that 3 times 2*l.* 13*s.* 6*d.* is 8*l.* 0*s.* 6*d.* I add it to 96*l.* 6*s.* 0*d.* which gives the complete value of 39; for 36 and 3 make 39. See the work.

Example 2. What comes 79 Cwt. of Cheese to at 28*s.* per Cwt?

l.	*s.*	*d.*	
1—	8—	0	× 2
			7 and 11
9—	16—	0	
			11
107—	16—	0	
2—	16—	0	
£110—	12—	0	Answ.

In this example I say, 7 times 0 is 0; then 7 times 8 is 56; which is 2*l.* 16*s.* set down 16, and carry 2; then 7 times 1 is 7, and 2 carried makes 9. So the first product is 9*l.* 16*s.* 0*d.* which multiplied by 11, produces 107*l.* 16*s.* 0*d.* or the value of 77; then for 2 wanting I multiply the price by it, and that gives 2*l.* 16*s.* 0*d.* which added to 107*l.* 16*s.* 0*d.* makes the whole value of 79, viz. 110*l.* 12*s.* 0*d.* as in the work. Or, as

there are no pence in the price, you may multiply the 28*s.* by 79, without bringing it into pounds as you work it, but omit it till the last, and then cut off or separate the last figure or cipher of the product towards the right-hand, and halve those towards the left; when half will be pounds, and the figure cut off shillings, as in this example.

s.
28
79
252
196
2) 221 : 2
£ 110 : 12

The half of 2 is 1, and the half of 1 is 0, and 10*s.* over, which joined to the two severed from 221, makes 12; so the answer is 110*l.* 12*s.* as before.

Example 3. 112 pounds of sugar at 5½*d.* per *lb.* set down thus,

5½ per pound.
11 and 10.

5 : 0½
10
2 : : 10 : 5
11 the product of 5½ by 2.
£ 2 : 11 : 4 the Answer.

Here, after I have multiplied by 11 and 10, the parts of 110 there wants 2; wherefore I multiply 5½ by 2, and it gives 11*d.* for 2*lb.* at 5½*d.* which added to 2*l.* 10*s.* 5*d.* the value of 110, makes 2*l.* 11*s.* 4*d.* the true value of 112*lb.* at 5½*d.* per pound.

Example 4. 94 stone of beef at 22*d.* or 1*s.* 10*d.* per stone.

1*s.* 10*d.*
10 and 9

18 : 4
9
8 : 5 : 0
7 : 4
£ 8 : 12 : 4 Answer.

Here what is wanting after the two multiplications is 4; wherefore I multiply 1*s.* 10*d.* (the price) by 4, which produces 7*s.* 4*d.* to be added, &c.

Example 5. 97½ C. raisins, at 1*l.* 5*s.* 6*d.* per cwt.

l.	*s.*	*d.*	
1	5	6	
		8	and 12
10	4	0	
		12	
122	8	0	
1	5	6	
0	12	9	for the ½ C.
£124	6	3	

After I have multiplied by 8 and 12, I add in the 25*s.* 6*d.* to the product, then for the half C. I take half of the price, which is 12*s.* 9*d.* and then collect the three lines, the total of which is 124*l.* 6*s.* 3*d.* for the answer.

Note, It may be here necessary to remark, that there is no need of too much solicitude, concerning coming so very near by two multiplications; for if there is 7 wanting to make up the true quantity, nay, if the two multiplications be short by 10 or 12, it is as easy to multiply the price by 10 or 12, as by 2 or 3, and the addition is the same.

Example 6. Once more, what comes 110¾ cwt. of hops to, at 4*l.* 10*s.* 6*d.* per cwt.

l.	*s.*	*d.*	
4	10	6	
		10	and 11
45	5	0	
		11	
497	15	0	
2	5	3	
1	2	7½	
£501	2	10½	

I first multiply by 10 and 11, which makes 110; and for the ¾ of a cwt. I take ¾ of the price, viz. first the half, and then the half of that half, that is, 2*l.* 5*s.* 3*d.* and 1*l.* 2*s.* 7½*d.* which three lines added together make 501*l.* 2*s.* 10½*d.* for the answer.

To prove Multiplication,

Whether of simple numbers, or of money, it is most surely done by division; but before that is known, take this method, viz. as you multiply the multiplicand by the multiplier, so contrariwise multiply the multiplier by the multiplicand; and if the products are alike, the work is right.

Example 1.

365 days in a year.	
24 hours in a day.	
1460	
730	
8760	

Here (reversely) I say, 5 times 4 is 20, set down 0 and carry 2; 6 times 4 is 24, and 2 is 26, set down 6 and carry 2; and 3 times 4 is 12, and 2 is 14. Then 5 times 2 is 10, set down 0 and carry 1; 6 times 2 is 12, and 1 is 13, set down 3 and carry 1; and 3

times 2 is 6, and one is 7. The products, added together, make 8760, the hours in a year, without taking in the odd 6 hours which the year consists of more than 365 days.

Example 2.

56 gallons of spirits at 3*s*. 2*d*. per gallon.

		7 and 8	
1	2	2	
		8	
8	17	4	Answer.

I say here, twice 7 is 14, 2 and carry 1*s*. and 3 times 7 is 21, and 1 is 22*s*. or 1*l*. 2*s*. Again, twice 8 is 16, 4 and carry 1*s*. and twice 8 is 16, and 1 is 17, 17*s*. and carry 0, and once 8 is 8*l*. Thus both these examples are the same in consequence as if you proceed in the common and regular method of Multiplication, and shews the truth of the operation.

The next rule in order is *Division*.

DIVISION.

This rule, though accounted the hardest lesson in Arithmetic, is made easy and intelligible to the meanest capacity.

The use of this rule is to know how many times one number or sum is contained in another; as if it were asked, How often is 9 contained in 54? The answer is 6 times. Or, how many times 12 is there in 144? Answer 12 times.

As by Multiplication great numbers or denominations are brought into small: so, contrarily, by Division small names are brought into greater; as farthings (from one gradation to another) into pounds, pounds weight into tons weight, and gallons liquid into tuns liquid, &c.

In this rule we are to take particular notice of these three certain terms following, viz.

1. The dividend, or number to be divided.
2. The divisor, or number by which we divide.
3. The quotient, or answer to the work, which shews how often the divisor is contained in the dividend.
4. The remainder; which is an uncertain branch of this rule, because there is sometimes a remainder, and sometimes not. And you must particularly note, that the remainder is ever of the same name with the dividend, and is always less than the divisor; for if it be more or equal to the divisor, the work is wrong.

Division is either single, or compound: single, when the divisor consists of a single figure, and the dividend of two at most. Any of this sort is answered by the Multiplication Table: as if 63 were to be divided by 7, the answer will be 9 times. Here 63 is the dividend, 7 the divisor, and 9 the quotient or answer.

Compound Division is when the dividend has many, or more figures or ciphers than two, and the divisor one or more figures or ciphers, &c.

Example.

How many times 7 is there contained in 365; or, how many weeks in a year?

7) 365 (52 1/7
35

15
14

(1)

A general rule for working:

Note,
1. Seek
2. Multiply
3. Subtract
4. Bring down

Having set down the example with two crooked lines, or half parenthesis, one for the divisor, and the other for the quotient, I begin according to the afore-mentioned general rule for working, by seeking or asking how often 1 can take 7 the divisor out of 36, the two first figures of the dividend, (for I cannot take 7 out of three, the quotient being never to begin with 0,) and the answer is 5 times; wherefore I place 5 in the quotient, and multiply the divisor 7 by it, (as directed in the general rule,) saying 5 times 7 is 35, which I place under 36, and then thirdly, according to the said rule, I subtract 35 from 36, and there remains 1; to which I bring down the next or last figure of the dividend, viz. 5, and then there is 15 for a new dividend, or dividual, to work upon; then I ask or seek again, how oft 7 may be taken in 15? and the answer is two times: wherefore I put 2 in the quotient next to the 5; by which 2 I also multiply the divisor 7, saying, twice 7 is 14; which I set down under 15, and subtract, and there remains 1, which I place between two semicircles thus (1) as it stands in the work: where observe, That 365 is the dividend, 7 the divisor, 52 the quotient, or answer, and 1 the remainder. The quotient declares that 7 is contained, in 365, 52 times, and 1 over or remaining; which I affix to the quotient as in the example, and signifies that there is one-seventh of a week, or one day, more than just 52 weeks in a year, or 365 days; which is easily to be found by collecting the days of each calendar month, as they stand in the Almanack.

You may note, That the said $\frac{1}{7}$ (one-seventh,) is properly what is called a fraction, or a piece or segment of the dividend; —of this hereafter.

Note also, That if there had been more figures or ciphers in the dividend, they must all have been brought down one by one at a time (and never but one at a time) and (after subtraction) set to the remainder; and if there remains 0, you must still bring down but one figure or cipher at a time; and for every figure or 0 so brought down, there must be a figure or 0 placed in the quo-

tient, according to the times you can take the divisor out of the several dividuals you make by bringing down a figure or cipher at a time out of the dividend, till all be brought down, and the work ended.

For a specimen, let us divide 8060 pounds of tobacco equally among 8 men.

8) 8060 (1007½ quotient.
8...
60
56
(4)

Here I say, the eights in 8, once, which I put in the quotient, then the eights in 0, 0 times; which I likewise put in the quotient; then the eights in 6, 0 times again, which is also placed in the quotient, and there remains 6; to which I bring down 0, the last of the dividend, and it makes 60; lastly, the eights in 60, 7 times, and 7 times 8 is 56, from 60, and there remains 4: so the quotient shews that each person must have 1007 pounds of tobacco for his share in the dividend 8060; and there remains 4 pounds over and above, which makes half a pound more due to each man, because 4 the remainder is half 8 the divisor; and so the work is done, the quotient giving to each man 1007 pounds and a half for his equal share.

Note, That in the operation, every time that you bring down a figure or cipher, you are to make a point under it in the dividend, to signify that such figure or cipher has been brought down and done with, as may be observed in the foregoing example.

Though this way of working is plain and easy to be understood, yet it is somewhat tedious; and therefore I shall shew a quicker way for dispatch when the divisor is a single figure; as shall be made conspicuous in the examples following, viz.

	I.	II.	III.
	4) 78906 (2	5) 34567 (2	6) 29702 (2
Quotient	19726	6913	4950
	4	5	6
Proof	78906	34567	29702

In the first of these examples I say, the 4's in 7 once, and there remains 3, which considered as placed before 8, the next figure in the dividend, makes 38; then the 4's in 38, 9 times; 9 times 4 is 36, and there remains 2; which makes the next figure in the dividend 29: then the 4's in 29, 7 times; 7 times 4 is 28, and 1 over, which makes 0, the next of the dividend, 10: and the 4's in 10 twice, twice 4 is 8, and there remains 2; which makes 6, the last figure of the dividend, 26: lastly the 4's

in 26, 6 times; and 6 times 4 is 24, and there rests 2, the remainder: and so for the other two examples. As for proof of the work, (or of any other examples) multiply the quotient by the divisor, and take in the remainder in the first place, or place of units; and if the product be the same with the dividend, the division is right; for I say, 4 times 6 is 24, and 2, the remainder, makes 26; 6 and carry 2, &c.

More Examples by a single Figure.

	3) 54321 (0	7) 279060 (5	9) 234567 (0
Quotient	18107	39865	26063
	3	7	9
Proof	54321	279060	234567

This is the shortest way of division that can be by a single figure.

As it is necessary, for expedition, to divide by 11 and 12, as by a single figure, to have the product in one line; divide as in these examples, viz.

	11) 72646206 (6	12) 76677240 (0
Quotient	6604200	6389770
	11	12
Proof	72646206	76677240
	11) 47627000 (3	12) 42007400 (8
Quotient	4329727	3500616
	11	12
Proof	47627000	42007400

In the first of these examples, I say, the 11's in 72, answer 6 times, &c. In the second I say, the 12's in 76, answer 6 times, &c. In the third, the 11's in 47, 4 times; 4 times 11 is 44, and there rests 3, &c. In the fourth I say, the 12's in 42, 3 times; 3 times 12 is 36, and there remains 6, &c.

By being ready and dexterous in the examples above, you may expeditiously divide by these numbers, viz. 110, 120, 1100, 1200, &c. for it is but cutting off or separating the ciphers from 11 and 12 (when these numbers happen to be divisors) and cutting off and separating the like number of figures or ciphers from the right-hand of the dividend, and then divide the other figures or ciphers toward the left-hand, by 11 or 12, as it shall happen, as in the examples following, viz.

Divide 34567 by 110, and 890123 by 120, and 98765 by 1100, and 678901 by 1200.

	11|0) 3456|7	12|0) 89012|3
Quotient	314 $\frac{2}{11}$ or $\frac{27}{110}$	7417 $\frac{8}{12}$ or $\frac{83}{120}$
	11|00) 987|65	12|00) 6789|01
Quotient	89 $\frac{8}{11}$ or $\frac{865}{1100}$	565 $\frac{9}{12}$ or $\frac{901}{1200}$

Examples.

Divide 123456789 by 10, 100, 1000, 10000.
By 10 the quotient is 12345678, and the remainder 9.
By 100 the quotient is 1234567, and the remainder 89.
By 1000 the quotient is 123456, and the remainder 789.
By 10000 the quotient is 12345, and the remainder 6789.

When the divisor consists of several figures, then there arises a little more difficulty in the work: but if the following directions are carefully attended to, the seeming difficulty is easily overcome, as in the succeeding example, viz.

Suppose I am to divide 78901 pounds among 32 parishes; or suppose an assessment of so much money was laid on so many parishes; what must each parish pay by an equal proportion towards the raising such a supply?

Divisor 32) 78901 (—— quotient.

In the example thus set out, I begin at the left hand, seeking how often I can take 32 out of 78; or, more easy, how many times 3 there is in 7, and the answer is 2 times: which I place in the quotient thus, 32) 78901 (2, and then according to the general rule of working I multiply the divisor 32, by the 2 placed in the quotient, saying, twice 2 is 4, and twice 3 is 6; so there is 64 to be taken out of 78, which should stand thus·

32) 78901 (2
64

14

Then I make a point under 9, the third figure of the dividend, and bring it down to the remainder 14, and then the work appears thus:

32) 78901 (2
64.

149

Then I seek again, asking how many time 32 in 149? which is not readily to be answered; but how many times 3, the first

figure of the divisor, is there in 14, the two first figures of the dividual 149, and the answer is 4 times; wherefore, after placing 4 in the quotient, I multiply (as directed in the general rule) the divisor 32 by the said 4, saying, 4 times 2 is 8, placing it under 9 in the dividual; then 4 times 3 is 12, which set down under 14; so there is 128 to be taken out of 149; and then the work appears thus:

```
32) 78901 (24
    64..
    ----
    149
    128
    ----
     210
```

And after substraction there remains 21; then I make a point under 0 in the dividend, and bring it down to the right of the remainder 21, and then there is 210 for a new dividual: then, as the general rule directs, I seek again, saying, how many times 32, the divisor, is there in 210, the dividual? or, easier, how many times 3 in 21? But observe well, that whenever you have a place more in the dividual than in the divisor, then always seek how oft you can take the first figure of the divisor out of the two first of the dividual, and the answer is 7 times; but 7 times 32 is 224, therefore you cannot take 224 out of 210, or rather you cannot take 22 out of 21; wherefore try in your mind before you set down the answer, or figure of the quotient, whether it will go to the number of times as is most easily suggested; as here the question or demand is readily answered 7 times, and so many times 3 may be taken in 21; but when you come to multiply the whole divisor by the times you place in the quotient, you begin at the right hand, and go towards the left, carrying the tens that arise to the next place, which increase the product so, that sometimes subtraction cannot be made, because the under line is greater than the upper; wherefore first try in your mind, as before mentioned; and since it will not bear 7 times, try if it will 6 times; saying, 6 times 2 is 12, and carry 1; and 6 times 3 is 18, and 1 is 19; and 19 may be taken out of 21; therefore set down 6 in the quotient, next to the 4, and multiply the divisor 32 by it, and the work will stand thus:

```
32) 78901 (246
    64...
    ------
    149
    128
    ------
     210
     192
    ------
      181
```

Here the divisor 32, multiplied by 6, gives 192 to be taken out of 210, and the remainder is 18; to which, after a point made under it, I bring down the 1, the last figure of the dividend, and then there is 181 for a new dividual: then, according to the rule, I seek again (for you are to note, that the aforesaid general rule for working must be as often repeated as you bring down a figure or cipher from the dividend, to make a new dividual; and also, that for every figure or cipher brought down, there must likewise be a figure or cipher placed in the quotient,) how many times 32, the divisor, may be taken out of 181, the divi-

dual, or how many times 3 in 18, and the ready answer is 6 times; but on the trial I find it will not go 6 times; wherefore I try a quotient figure less by 1, viz. 5 times, and find it will bear it; and setting 5 in the quotient next to the 6, I multiply the divisor 32 by it, and it produces 160; which subtracted from 181, the last remainder is 21; and the quotient or answer is 2465; which shews that 32 is contained in 78901, 2465 times, and 21 over.

```
32) 78901 (2465 21/32
    64...
    -----
     149
     128
    -----
      210
      192
    -----
       181
       160
    -----
        21
```

Again, admit a nobleman has 30,000*l.* per ann. what is his daily income?

If you divide 30,000 by 365 (the days in the year) the quotient will be the answer. Set it down for working thus:

365) 30000 (

First, seek how many times 365 can be taken in 300? (an equal number of places with the divisor) answer 0 times; wherefore I go to a place farther to the right-hand, in the dividend, (for 0 must never begin the quotient, as was said before,) not making a point under it, as you do in bringing down the other figures of the dividend; and there being a place more in this dividual than in the divisor, I seek how oft the first figure of the divisor, viz. 3, is contained in the two first figures or places of the dividend, viz. 30, and the answer is 10 times; but you are never to take above 9 times at once, in any of these examples of division: wherefore try in your mind whether it will bear 9 times, before you set it down in the quotient, (as was said before,) saying to yourself, or in your mind, 9 times 5 is 45, 5 and go 4; 9 times 6 is 54, and 4 is 58, 8 and go 5; and 9 times 3 is 27, and 5 is 32: now 32 cannot be taken out of 30, wherefore take a figure less by a unit, or one, viz. 8 times; and finding it will go 8 times, set down 8 in the quotient; and then say 8 times 5 is 40; 0 and carry 4; and 8 times 6 is 48, and 4 is 52; 2 and carry 5; and 8 times 3 is 24, and 5 is 29; and then there is 2920 to be taken from 3000; and after subtraction the work will appear thus:

```
365) 30000 (8
     2920
     ----
       80
```

Then to the remainder 80, I bring down 0, the last figure of the dividend, and then there is 800 for a new dividual; then you must try how oft you can take 365 out of the said dividual,

800, and the number of places being equal in both divisor and dividual, viz. 3, ask how oft 3 in 8: answer twice; so put in the quotient, and say, twice 5 is 10, 0 and carry 1; and twice 6 is 12, and 1 is 13; 3 and carry 1; and twice 3 is 6, and 1 is 7: so there is 730 to be deducted from 800, and the remainder is 70, as in the work may be seen, viz.

```
365) 30000 (82
     2920.
     -----
      800
      730
      ---
      (70)
```

Thus it appears that the nobleman had eighty-two pounds per day, and 70*l.* over, which, if multiplied by 20, the shillings in a pound, would produce 1400 shillings; which, if divided by the divisor, 365, there would come out 3*s.* a day more, and there will be a remainder of 305, which multiplied by 12, the pence in a shilling, produces 3660; which divided still by 365, gives 10*d.* a day more: so that 30,000*l.* a year is 82*l.* 3*s.* 10*d.* a day.

Once more, divide 46242 gallons by 252, the gallons in a tun, thus set down:

```
252) 46242 (183
     252..
     -----
     2104
     2016
     ----
      882
      756
      ---
     (126)
```

In this example, after inquiry, I find that it will not go twice, therefore I set down 1 in the quotient, and place 252 under 462 of the dividend, and, after subtraction, the remainder is 210; to which I bring down 4 from the dividend, and the dividual is 2104; and then seeking again, I find it will bear 8 times, which placed in the quotient, and the divisor 252 multiplied by it, the product is 2016, to be subtracted from 2104; which being done, the remainder is 88; to which 2, the last figure of the dividend, being brought down, there is 882 for the last dividual; and then seeking again, I find it will go 3 times; and the product of the divisor, multiplied by 3, is 756; which subtracted from 882, there remains 126 for the true remainder: so that by this division I find there are 183 tuns in 46242 gallons, and 126 gallons remaining, or over and above, which being half of 252, the divisor, the remainder is therefore half a tun more.

When you have a cipher or ciphers in the divisor, in the first, second, or third place, &c. separate such cipher or ciphers with a dash of the pen from the rest of the divisor; and also cut off as many figures or ciphers from the right of the dividend, as you cut off ciphers from the divisor; and divide the remaining figures towards the left-hand, by the remaining significant figures of the divisor.

Example.

Divide 42952 square poles of land by 160, the square poles in an acre of land.

```
16|0) 4295|2 (268
      32..
      ----
       109
        96
       ---
       135
       128
       ---
        (7)
```

Here the cipher is cut off from the divisor, and 2 from the dividend; then I ask, how oft 16 in 42? answer twice; then the 16's in 109? answer 6 times; then 16's in 135? answer 8 times. So there are 268 acres, and 7 remains; that is, 268 acres $\frac{7}{16}$, or $\frac{72}{160}$, or almost half an acre.

Divide 27|00) 62746|22 (2323$\frac{25}{27}$ or $\frac{2522}{700}$

```
      54...
      ----
       87
       81
      ----
       64
       54
      ----
      106
       81
      ----
       25
```

In this example, two ciphers are separated from the divisor, and also two places from the dividend, and the 62746 is divided only by 27. See the work.

The Proof of Multiplication and Division.

These two rules prove each other; for in proving Multiplication, if you divide the product by the multiplier, the quotient will be the multiplicand; or if by the multiplicand, the quotient will be the same with the multiplier.

Example I.

```
  345
   24
  ----
 1380
  690
 ----
24) 8280 (345
    72..
    ----
     108
      96
    ----
     120
     120
    ----
      (0)
```

Or thus,

Example II.

```
345) 8280 (24
     690
     ----
     1380
     1380
     ----
      (0)
```

To prove Division.

Division may be proved by Division thus: If you divide the dividend by the quotient, the quotient will be your former divisor.

Example.

Divide 8280 by 345 345) 8280 (24

Here the working again is needless, it being in the page foregoing: and shews the truth of the assertion, that Division may be proved by Division, as aforesaid.

But the most usual way of proving Division is by Multiplication, in this manner, viz. Multiply the quotient by the divisor, and the product will be equal to the dividend.

345 quotient
24 divisor

1380
690

8280 proof.

Note, That when there is any remainder, such remainder must be taken in, or added to the product.

As in Multiplication I gave some examples of its utility in money, so likewise I shall give a few examples in Division of Money; whereby may be seen how expeditiously things may be done without having recourse to Reduction, the Rule of Three, &c. viz.

Example I.

Divide 26*l.* 12*s.* 6*d.* equally among five men: for disposition of working, set it down as follows:

	l.	*s.*	*d.*
5)	26	12	6
	5	6	6
			5
Proof	26	12	6

In the working of this, I say, the 5's in 26, 5 times; 5 times 5 is 25, and there remains 1, that is, 1 pound or 20 shillings, which, with the 12*s.* in the place of shillings, make 32*s.*; then the 5's in 32, 6 times; 6 times 5 is 30, and there remain 2*s.* or 24*d.* which, with 6*d.* in the place of pence, makes 30; then the 5's in 30, 6 times: and so the work is done, and the answer is that each man must have 5*l.* 6*s.* 6*d.* for his equal share in the said division of 26*l.* 12*s.* 6*d.* among five persons; and the truth of it is proved by Multiplication of Money, sufficiently shewn in the Rule of Multiplication; as here 5 times 6 is 30, 6 and carry 2; and 5 times 6 is 30, and 2 is 32; 12 and carry 1; and 5 times 5 is 25, and 1 is 26, &c.

Example.

Divide the charges of a country feast, amounting to 246*l.* 13*s.* 4*d.* equally among 12 stewards, to know what each steward must pay.

	l.	*s.*	*d.*
12)	246	13	4
Answer,	20	11	$1\frac{4}{12}$

Here I say, tne 12's in 24, twice, and 12's in 6, 0 times, and there remain 6*l.* or 120*s.* and 13*s.* make 133; and then the 12's in 133 are 11, and there remains 1*s.* or 12*d.* and then 12 and 4 is 16; and the 12's in 16, once, and 4 remains; so that each steward must pay 20*l.* 11*s.* $1\frac{4}{12}d.$ or four-twelfths of a penny, something more than a farthing; and this may be proved as that above.

When any quantity is such a number, that any two digits of the Multiplication Table, multiplied together, make the said quantity or number, then the quotient may be very expeditiously found at two divisions, and sooner than at one.

Example. Divide 7872 by 32. In this example the component parts, which, multiplied together, make the divisor 32, are 4 and 8, or 8 and 4, for it matters not which of them you divide by first; for either way will give a true and the same quotient: as may be seen by the different methods of the following work:

4)	7872	Or thus, 8)	7872
8)	1968	4)	984
	246 Quotient.		246 Quotient.

Here, though the operations are diverse, yet the quotients are one and the same. Again, divide 44184 by 56.

Example 3.

7)	44184
8)	6312
	789

Here the divisors are 7 and 8, or 8 and 7; for either, or both, will give the same quotient.

And thus may above forty examples be wrought by numbers out of the Multiplication Table, with great dispatch and expedition, as by 15, 18, 25, 35, 64, 72, 96, &c.

When it happens that there is any remainder of the first division, or the last, or both, to know the true remainder, as if you divide by the common way, take this method, viz. multiply the first divisor by the last remainder, and take in or add the first remainder, if there be any, and the product will be the true or same remainder as if you divided by the long way.

Example. Divide 4567 by 15.

3) 4567

5) 1522—1

304—2

(7)

Here I multiply 3, the first divisor, by 2, the last remainder, and take in 1, the first remainder, and it makes 7 for the true remainder, as may be proved at leisure by the other way.

The same method may be taken with respect to component parts in division of money, as in division of simple numbers.

Example 4.

3) *l.* *s.* *d.*

Divide 463 18 6 into 18 equal parts.

6) 154 12 10

Answer, £25 15 $5\frac{1}{6}$

By this method of Division of Money (if the quality be as aforesaid made by even component parts) you may, by having the price of several things, know the price or value of one thing, at the said rate, as well as by the Rule of Three; so does Multiplication of Money answer questions in the Rule of Three, when the first number is a unit or one.

Example of Division.

7) *l.* *s.* *d.*

If 84*lb.* of coffee cost 31 10 0 what costs 1*lb.*?

12) 4 10 0

Answer, £0 7 6

As in Multiplication of Money, to have an answer, you multiply the price by the quantity; so in Division of Money, you divide the price by the quantity, to have your answer.

I could speak more largely, if I had room, of the excellent uses that may be made of Multiplication and Division only; but their various uses will be better understood by their application in the following rules of arithmetic, particularly in the next rule.

REDUCTION,

Which is an application of Multiplication and Division, and shews how to reduce numbers of one denomination to another, thereby discovering the same value, though in different terms.

1. As first, all great numbers are brought into smaller by Multiplication, as pounds into shillings, pence, or farthings, by

multiplying by 20, 12, or 4. Or hundreds weight into pounds weight, by multiplying by 4, and by 28, or by 112; or lower, into ounces or drachms, by multiplying 16 by 16.

2. So, on the contrary, all small names are brought into greater by Division; as farthings into pounds, by dividing by 4, 12, and 20; and pounds weight into hundreds weight, by dividing by 28 and 4; and drachms into pounds by dividing by 16 and 16.

But you may note, That pounds are brought into pence, by multiplying by 240; or into farthings, by multiplying by 960; and just the contrary by Division.

Example I.

In 240*l.* sterling how many pence?
20 shillings 1 pound.

4800 shillings is 240*l.*
12 pence 1 shilling.

Ans. 57600 pence in 240*l.*

Or thus:
240*l.*
240*d.* in a pound.

9600
480

Answer, 57600 pence in 240*l.*

Example II.

In 226 tons of copper, how many pounds weight?
20 hundred wt. 1 ton.

4520 hund. wt. in 226 tons.
4 qrs. 1 C.

18080 qrs. of C. wt. in 226 tons.
28 lb. 1 qr. of C.

144640
36160

506240 pounds wt. in 226 tons.

Or thus:
226 tons.
20

4520
112

54240
4520

506240

These foregoing examples are great names to be brought into small, as may be easily observed and understood;) therefore as the rule directs, it is done by Multiplication, by multiplying the greater name by the number of the next lesser name that makes one of the said greater; as in the last example, the lesser name to pounds is shillings, wherefore I multiply by 20, because 20 of that lesser name make one of the said greater name, *i. e.* 20 shillings make a pound. And the same regard is had, and method observed, in the example of weight, as is very plain to

be seen in the work, and is called Reduction Descending, because it brings higher or greater denominations into lower or lesser.

Example 3.

Bring 494400 farthings into pounds.

4)

12) 123600 pence

2|0) 1030|0 shillings

515 pounds

Or thus:

96|0) 49440|0 (515*l.*
480..
144
96
480
480
(0)

In this way I divide by 960, the farthings in a pound, &c.

In the first way I divide the farthings by 4, because 4 of them make a penny, and the quotient is pence; then these pence I divide by 12, because 12 of them make a shilling, and that quotient is shillings; which shillings I divide by 20, to bring them into pounds, thus: I cut off the cipher in the dividend towards the right, for the cipher that is in the divisor 20, which is also separated from 2 with the dash of the pen, (as may be seen in the work;) then I halve the figures one by one as they are united with the remainder in the dividend; which half is pounds, and is a short way of dividing by 20: in the example, I say the half of 10 (because I must not set down 0 at the beginning) is 5, and the half of 3 is 1, but there remains 1, which makes the next, which is 0, 10; and the half of 10 is 5: so that 10300 shillings make 515 pounds, or there are so many pounds in 494400 farthings.

Example 4.

Reduce 27552 pounds weight into hundreds weight.

4)

28) 27552 (984
252..
246 *cwt.* Answer.
235
224
112
112
(0)

Or thus:

lb. *cwt.*
112) 27552 (246 Answer.
224..
515
448
672
672
(0)

In the first of the two foregoing examples, I divide the pounds by 28, to bring them into quarters; then I divide those quarters by 4, to bring them into hundreds weight, as in the work.

In the second way, I divide the pounds weight by 112, the pounds in a hundred weight, and it brings the pounds weight into hundreds weight at once.

The said examples are of small denominations to be brought into greater; and therefore, according to the second rule of direction, it is done by Division, by dividing the lesser name by as many of them as make the next greater name; that is, by 28, because 28 of them make one of the next greater name, viz. a quarter of an hundred; and this Reduction is called Reduction Ascending, because it brings low or small names to higher or greater denominations: by which may be observed, that all questions in Reduction, whether descending or ascending, are answered either by Multiplication or Division, or by both; as will plainly appear in the sundry examples of reducing of divers denominations to others.

When it is required to reduce numbers of several denominations by Reduction descending, or by Multiplication, you are to work as before; but you must always remember to take in such numbers as stand in the place of the next inferior denomination; as when you multiply the pounds by 20, if there be any shillings in the denomination or place of shillings, you must take them in: and so when you multiply the shillings by 12, if there be any pence in the place of pence, you must also take them in; and so when you multiply the pence by 4, to bring them into farthings, you must take in the farthings, if there be any in the place of farthings, as in the following work.

Example.

In 346*l.* 16*s.* 9½*d.* how many farthings?

20 shillings 1 pound.

6936 shillings in 346*l.* 16*s.*

12 pence 1 shilling.

83241 pence in 346*l.* 16*s.* 9*d.*

4 farthings 1 penny.

332966 farthings in 346*l.* 16*s.* 9½*d.*

The example is so plain in the work, that it hardly needs any explication; but I begin to say, 0 is 0, but 6 in the units of shillings is 6; then twice 6 is 12, and 1 in the tens of shillings is 13, set down 3 and carry 1; and twice 4 is 8, and 1 is 9, set down 9; and twice 3 is 6: then by 12, saying, 12 times 6 is 72, and 9*d.*

(in the place of pence) is 81, set down 1 and carry 8; and 12 times 3 is 36, and 8 is 44, set down 4 and carry 4; and 12 times 9 is 108, and 4 is 112, set down 2 and carry 11; and 12 times 6 is 72, and 11 is 83, &c.

Example.

In 56 cwt. 2 qrs. 16 lb. of tobacco, how many pounds weight?

4

---

226 qrs. in 56 cwt. 2 qrs.
28 lb. 1 qr. of a cwt.

1814
453

6344 lb. weight in 56 cwt. 2 qrs. 16lb.

In the foregoing work, I must multiply the 56 cwt. by 4, and take in two quarters; and then I multiply the 226 qrs. by 28, saying, 8 times 6 is 48, and 6 (the unit figure in the odd pounds) is 54, set down 4, and carry 5, &c. then I multiply by 2, saying, twice 6 is 12, and 1 (that stands in the place of the tens in the odd pounds) is 13, set down 3, and carry 1, &c. then adding the two products together, they make 6344 lb. contained in the 56 cwt. 2 qrs. 16 lb. as in the work.

Reduction Ascending is the bringing numbers from a lesser denomination to a greater, and is the reverse of Reduction Descending; and each may serve as a proof to the other, one being performed by Multiplication, and the other by Division.

Note, That when at any time in Reduction Descending you take in, or add to, the odd money, weight, or measure, as you multiply the several denominations, such quantities will be the remainders in Reduction Ascending.

4) *Examples by the two foregoing Sums.*

In 332966 farthings, how many pounds?

---

12) 83241—$\frac{1}{2}$

2|0) 693|6—9*d.*

346—16*s.*

So that in 332966 farthings, there are 346*l.* 16*s.* 9$\frac{1}{2}$*d.* and is a sure proof of the foregoing work descending.

Again, In 6344 pounds weight, how many hundreds weight?

4)
28) 6344 (226 qrs.
56 .. ——
—— 56 C. 2 qrs. taken in.
74
56
——
184
168
——
(16) remain pounds taken in.
——

So that in 6344 pounds weight, there is 56 C. 2 qrs. 16 lb. and proves the foregoing examples descending to be right.

Now follow promiscuous examples of both kinds of Reduction, one proving the other.

In 276*l.* 12*s.* how many pence?

20
——
5532
12
——
66384*d.* Answer.

12)
In 66384*d.* how many pounds?
——
2|0) 553|2
——
Ans. 276*l.* 12*s.* and proof.
——

In 47964 grains, how many pounds Troy?

2|0)
24) 47964 (199|8
24 ... ——
—— 99 oz. 18 dwt.
239
216
——
236 12) 99 (
216 ——
—— 8—3 oz.
204
192
——
12 grs.
——
Answer, 8*lb.* 3*oz.* 18*dwt.* 12*grs.*

In 456 C. 3 qrs. 27 lb. of copper, how many pounds?

4

1827
28

14623
3656

51183

Bring 4796 ells Flemish into ells English; multiply by 3, and divide by 5, because 3 quarters make an ell Flemish, and 5 an ell English.

3

5) 14388

$2877\frac{3}{5}$

Reduce 456 ells English into yards; multiply by 5, and divide by 4, thus:

456 English ells.
5 qrs. 1 Eng. ell.

4) 2280 qrs.

Yds. 570 Answer.

In 570 yards how many Eng. ells?
4 qrs. 1 yard.

5) 2280

English ells 456 Answer and Proof.

Bring 130 tuns of wine into gallons.

4 hogsheads 1 tun.

520
63 gallons 1 hogshead

1560
3120

Answ. 32760 gallons.

Or thus:

252 gallons 1 tun
130 tuns.

7560
252

32760 gallons.

Lasts. Quarters. Bushels. Pecks.

Reduce 42 — 3 — 5 — 2 into pecks.

10 qrs. 1 last.

423
8 bushels 1 qr.

3389
4 pecks 1 bushel.

13558 pecks in 42 lasts, 3 qrs. 5 bushels, and 2 pecks.

Here I multiply by 10, and take in 3 qrs. and then by 8 and take in 5 bushels; and lastly, by 4, and take in 2 pecks.

4)
In 13558 pecks, how many lasts, &c.?

8) 3389 2 pecks taken in.

1|0) 42|3 5 bushels taken in.

Lasts, 42 3 quarters taken in.

Answer, 42 lasts, 3 quarters, 5 bushels, and 2 pecks.

By Reduction also foreign coins or exchanges may be reduced to sterling money; and, on the contrary, sterling money to foreign.

Reduce 246 Venetian ducats de Banco into sterling money, the exchange at 52*d.* sterling per ducat, thus:

246
52

492
1230

12) 12792

2|0) 106,6

53*l.* 6*s.* to be paid in London for the 246 ducats drawn in Venice.

Reduce 53*l.* 6*s.* sterling into ducats at 52*d.* sterling per ducat.

20

1066
12

52) 12792 (246 ducats to be paid in Venice for 53*l.* 6*s.* drawn
104 in London.

23, &c.

To reduce Flemish money into sterling money, divide the pence Flemish by the course of exchange, suppose 33*s.* 4*d.* and the quotient will be the sterling money; and what remains multiply by 20, &c.

Example. In 242*l.* 13*s.* 4*d.* Flemish, how many pounds sterling, &c.?

20

4853
12

33*s.* 4*d.* Flemish
12

400

4|00) 582|40 (145

4|00) 582|40 (145

Remains 240
20

4|00) 48|00 (12

Answer, £145 : 12 : 0

By the work it appears that 145*l.* 12*s.* sterling answers or is equivalent to 242*l.* 13*s.* 4*d.* Flemish, at 33*s.* 4*d.* Flemish per pound sterling.

Thus Flemish money may be reduced into sterling money, though the course of exchange may be at any other rate of shillings and pence Flemish; but when the rate above, viz. 33*s.* 4*d.* is reduced to pence, then the answer is sooner found by multiplying by 3, and dividing by 5; for 400*d.* Flemish is the same to 240*d.* sterling (each being a pound) as 5 is to 3, for if you divide 400*d.* by 5, it quotes 80; so 240 divided by 3 quotes the same.

The foregoing example done by the last proposed way.

£242 13 4 Flemish.
3

5) 728 0 0

£145 12 0

Note, French money is reduced to sterling, viz. livres, sols, and deniers or French pence, as sterling and Flemish money is, by multiplying by 20 and 12.

In 326 French crowns, each 54¼*d.* sterling, how many pounds sterling?

426
54

1704
2130
106½ or ½

12) 23110 : 10*d.*

2|0) 192|5

Ans. £ 96 : 5 : 10½

In this example the number of crowns is multiplied by 54*d.* and for the ¼, I take the 4th part of 426, which is 106½ of a penny, or a halfpenny, which added to the other pence, gives for total 23110*d.* which divided by 12, quotes 1925, and 10*d.* remains: so the answer is 96*l.* 5*s.* 10½*d.* sterling, as in the work.

Bring 1600 pieces of eight at 54¼*d.* sterling into pounds sterling.

1600 ÷ 4
54

6400
8000
400

12) 86800 pence

2|0) 723|3 : 4

£ 361 : 13 : 4

Here the 1600 pieces of eight are multiplied by 54, to bring them into pence, and for the $\frac{1}{4}$ I take the $\frac{1}{4}$ of 1600, &c. as in the work; and the answer is, 361*l.* 13*s.* 4*d.*

This method is of use in reducing the exchanges of Cadiz, Leghorn, and Genoa: or when the exchange is at so many pence and eighths of a penny, (as often as the exchanges run,) then multiply the given number, to reduce it into pence, by the pence contained in a piece of eight; and also multiply the said given numbers apart, by the numerator or upper figure of the fraction, and divide by the denominator or under figure of the fraction, and the quotient will be pence; which add to the other pence produced by multiplying the given number by the pence contained in one of the pieces for exchange, then divide the total pence by 12, &c.

Example. Bring 296 dollars, at $52\frac{5}{8}d.$ sterling into pounds sterling.

296
52

592
1480

15392
185

12) 15577

2|0) 129|8—1

296 dollars
5

8) 1480

185 equal to $\frac{5}{8}$ths of 296.

Answer, 64*l.* 18*s.* 1*d.* sterling money due for 296 dollars, at $52\frac{5}{8}d.$ sterling per dollar.

But ducats or dollars, crowns, milreas, &c. are more expeditiously cast up by the rules of Practice, hereafter to be shewn.

The GOLDEN RULE, *or* RULE *of* THREE.

It is called the Golden Rule, from its excellent performance in Arithmetic, and in other parts of mathematical learning.

And it is called the Rule of Three, because, from three numbers given, proposed, or known, we find out a fourth number required or unknown, which bears such proportion to the third, as the second does to the first number; from whence also it is called the Rule of Proportion.

And of this proportion there are two sorts; one called Direct, and the other Indirect, or Reverse.

Direct Proportion is when the second or third numbers are to be multiplied together, and their product divided by the first.

Indirect or Reverse Proportion, is when the first and second numbers are to be multiplied together, and their product divided by the third.

In Direct Proportion, the fourth number, or answer to the question, contains the third number as often (or as many times) as the second contains the first.

But in Indirect Proportion, the greater the third number is, the less is the fourth; and the lesser the third number is, the greater is the fourth.

The Stating of the Question.

The chief difficulty that occurs in the Rule of Three, is the right placing the numbers, or stating of the question; for, when that is done, you have nothing more to do but to multiply and divide, and the work is completed.

And to this end we are to remember, that of the three given numbers, two of them are always of one name or denomination, and the other number is ever of the same name with the fourth number, or answer required; and must always be the second or middle number: and the number that asks the question, must still possess the third or last place, and the other number of the same name with the third, must be the first number; for the first and third numbers must always be of one name, viz. both money, both weight, both time, or both measure. And though they be of one kind, yet if one of them is altered, by Reduction from a higher to a lower name, then the other must be reduced to the same name. For you must particularly note, That if either the first or third numbers consist of several denominations, that is, of pounds and shillings; or pounds, shillings, and pence; or of pounds, shillings, pence, and farthings; or of tons, hundreds, quarters, and pounds, &c. then must they be reduced to the lowest name mentioned. And if any one happens to be of divers denominations, and the other but of one name; then the number of one name must be reduced as low, or into the same name with the other. As, suppose the first number is brought into

farthings, then the third number, though but pounds, must be brought into farthings also. Then you are to multiply the second and third numbers together, (when the proportion is direct,) and divide the product by the first number, and the quotient thence arising will be the answer to the question, and in the same name with the middle number: and if in the small denomination, it must be brought by Division to the highest name, for the better understanding the answer. You must also note, That if the middle number be of several denominations, it must be brought into the lowest mentioned.

Example I.

If 12 gallons of brandy cost 4*l.* 10*s.* what will 134 gallons cost at that rate?

Stated for working thus:

Gallons.	*l.*	*s.*	Gallons.
If 12 ———	4	: 10	——— 134
	20		90
	90		12) 12060
			2|0) 100 5
			£ 50|5

Here the first and third numbers are like names, viz. both gallons: and 134 being the number that asked the question, it has the third place, as it always must, as before asserted: and 4*l.* 10s. the second number, being of two denominations, viz. pounds and shillings, it is reduced into the lowest mentioned, viz. shillings, as before directed, and then the three numbers are these, viz. 12—90—134; and 134, the third number, being multiplied by 90, the second number, produces 12060; which divided by 12, the first number, quotes 1005, which are shillings, because 90, the middle number, were shillings; and 1005 shillings, divided by 20, give 50*l.* 5*s.* for the answer: and for the proof of its truth, state it back again thus·

Example 2.

Gal.	*l.*	*s.*	Gal.
If 134 cost	50	: 5—what cost	12?
	20		
	1005		
	12		

134) 12060 (90*s.* Answer, or 4*l.* 10*s.* which is the cost
1206 of 12 gallons, and is a sure

proof of the first work; and the back-stating and working the proof is as much a question in the Rule of Three as the first.

Example 3.

If 56lb. of Indigo cost 11*l.* 4*s.* what will 1008lb. cost at that rate?

lb. s. lb.
If 56—224—1008? Answer 4032*s.* or 201*l.* 12*s.*

Example 4.

If half a cwt. of copper cost 4*l.* 18*s.* what quantity will 14*s.* buy at that rate?

s. lb. s.
If 98 buy 56, what 14? Answer 8lb. of copper.

Example 5.

If 4 cwt. 3 qrs. of sugar cost 5*l.* 15*s.* 7*d.* what will 4 hogsheads come to, weighing 42 cwt. 1 qr. 14lb.?

lb. d. lb.
If 532—1387—4746? Answer 12373 pence, or 51*l.* 11*s.* 1*d.* and the remainder, 226, multiplied by 4, gives 904; which also vided by the first number, 532, gives a farthing more; and 372 for the last remainder: so the whole is 51*l.* 11*s.* $1\frac{1}{4}d.\frac{3\,7\,2}{5\,3\,2}$

Any of these examples, or any other, may be proved by a back-stating, according as the first example was proved; and each proof becomes a question in the Rule of Three.

Example 6.

If I have 50*l.* a-year salary, how much is due to me for 144 days' service at that rate?

days. l. days.
If 365—50—144? Answer 19*l.* 14*s.* $6d.\frac{90}{365}$ parts of a penny.

In this example the product of the third by the second number is 7200; which divided by the first, 365, (according to the rule) quotes 19 pounds, the name of the middle number, and there is a remainder of 265; which multiplied by 20, according to Reduction, and the product still divided by 365, there comes out 14 shillings; and yet there is a remainder of 190, which multiplied by 12, and the product divided by 365, gives 6*d.* and there is a remainder of 90; which if multiplied by 4 (the last inferior name) and divided by 365, yet would not come to a farthing more: so that the answer is as above, 19*l.* 14*s.* $6d.\frac{90}{365}$

You are to note always, That when any thing remains that is reducible to an inferior or lower name, after multiplied as above, it must continually be divided by the first number.

Note also, When the first of the three given numbers is an unit or one, the work is performed, or answer found, by multiplication.

Example 7.

If I am to give 17*s.* for 1lb. of Belladine silk, what must I give for 264lb. at that rate?

lb. s. lb.
If 1——17——264
17

Answer, 4488*s.* or 224*l.* 8*s.*

Example 8.

If I buy 49 bags of hops at 12*l.* 12*s.* 6*d.* per bag, what come they to at that rate?

Bag 12 12 6 × 49
7 and by 7

88 7 6
7

£618 12 6

The foregoing work is performed by the component parts, as taught in Multiplication.

Example 9.

If 12 ells of Holland cost 3*l.* 6*s.* what is the price of 1 ell at that rate?

Ells. 12) *s.* Ell.
If 12——66——1 Answer 5*s.* 6*d.*

Example 10.

If 56 yards of broad cloth cost 40*l.* 12*s.* what comes a yard to at that rate?

Yds. 7) *l.* *s.* Yd.
If 56———40—12———1 Answ. 14*s.* 6*d.* per yard.

8) 5 16

0 14*s.* 6*d.*

This example is wrought by Division of Money, and by component parts; as before taught in the rule of Division.

Example 11.

If A owes B 296*l.* 17*s.* and compounds at 7*s.* 6*d.* in the pound what must B take for his debt?

s. *d.* *s.*
If 20——90——5937. Answer 111*l.* 6*s.* 4½*d.*

Example 12.

If a gentleman has an estate of 500*l.* a-year, what may he expend daily, and yet lay up 12*l.* per month?

First, multiply 12*l.* by 12, the months in a year, and it makes 144*l.* which deducted from 500*l.* the remainder is 356*l.* Then say,

If 365 days be 356*l.* what 1 day? Ans. 19*s.* 6*d.*—30 remains.

After you have reduced the pounds into shillings, which make 7120, you divide them by 365, and the quotient is 19*s.* 6*d.* $\frac{30}{365}$ per day.

The RULE *of* THREE INVERSE,

Or of Indirect Proportion.

What Indirect Proportion is, has been hinted already. In direct proportion, the product of the first and fourth numbers, is equal to the product of the second and third. But in this proportion, the product of the third and fourth numbers is equal to the product of the first and second.

The method of stating any question in this rule, is the same with that of the direct rule.

For the first and third numbers must be of one name, and so reduced, as in that rule: and the number that moves the question must possess the third place; and the middle number will be of the same name with the answer, as it is there.

To know when the question belongs to the direct, and when to the reverse rule, study the following observations.

When the question is stated as aforesaid, consider whether the answer to the question ought to be more or less than the second number; if more, then the lesser of the first and third numbers must be your divisor.

But if less, then the greater of the two extreme numbers must be your divisor.

And if the first number of the three is your divisor, then the proportion is direct; but if the last of the three is your divisor, the proportion is indirect or reverse.

Or, without regard to direct or reverse,

If more is required, the lesser
If less, the greater } is the divisor.

EXAMPLES *for* EXPLANATION.

Example 1.

If 4 men plane 250 deal boards in 6 days; how many men will plane them in two days?

If 6 days require 4 men, what 2 days?

6

2) 24

12 men. Answer.

Example 2.

If a board be 9 inches broad, how much in length will make a square foot?

in. b. in. b.
If 12———12, what 9 inches broad?
12

9) 144

Answer, 16 inches in length.

In these examples, the first and second numbers are multiplied together, and the product is divided by the third; for, in the first example, it is most certain, that 2 days will require more hands to perform the work than 6 days; therefore the lesser of the extreme numbers is the divisor; and declares the question is in the indirect proportion.

Likewise, in the second example, 9 inches in breadth, must needs require more in length to make a foot than 12 inches in breadth: wherefore it is in the same proportion with the first example, because the divisor is the third number.

Example 3.

How many yards of sarcenet, of 3 qrs. wide, will line 9 yards of cloth of 8 qrs. wide?

qrs. wide. yds. long. qrs. wide.
If 8———9———3
8

3) 72

Here the narrower the silk, the more in length is required.

Yards 24 Answer.

Example 4.

If a quartern loaf weigh 4½lb. when wheat is 5*s*. 6d. the bushel, what must it weigh when wheat is 4*s*. the bushel?

d. half lb. d.
If 66———9———48 Answer, $6\frac{9}{48}$lb.

Example 5.

If in 12 months 100*l*. principal gains 5 pounds interest, what principal will gain the same interest in 5 months?

M. *l*. P. M.
12———100———5
12

5) 1200

Answer, 240*l*. principal.

The DOUBLE RULE *of* THREE DIRECT.

In this rule there are five numbers given to find out a sixth, which is to be in proportion to the product of the fourth and fifth numbers, as the third number is to the product of the first and second numbers.

Questions in this kind of proportion are wrought either by two operations in the Single Rule of Three Direct, or by the rule composed of the five given numbers; and the one may be a proof to the other: as may be seen in the example following.

Example 1. If 100*l.* principal in 12 months gain 5*l.* interest, what will 246 pounds gain in 7 months?

If 100*l.* gain 4*l.* what will 246*l.*?

5

1|00) 12|30
20

1|00) 6|00—Answ. 12*l.* 6*s.*

Then say again, if 12 months gain 12*l.* 6*s.* what 7 months?

20

246
7

12) 1722 (6

2|4 14|3—Answer, 7*l.* 3*s.* 6*d.*

In the first stating, the answer is this, that if 100*l.* gain 5*l.* then 246*l.* will gain 12*l.* 6*s.* Then I say, in the next stating, if 12 months gain 12*l.* 6*s.* what will 7 months? And the answer is, 7*l.* 3*s.* 6*d.* And so much will 246*l.* gain in 7 months, if 100*l.* gain 5*l.* in 12 months.

You must particularly note, that in all operations where the answer to the question is found by two statings of the Rule of Three, the answer of the first stating is over the middle number of the second stating: as in the preceding example.

The foregoing question may be answered by a stating composed of the 5 given numbers, thus:

(1) (2) (3) (4) (5)
If 100*l.*—12 mo.—5*l.*—246*l.*—7 mo.

12 7

1200 1722
5

1200) 8610 (7*l.*

In this work, in the stating of the question the first and fourth numbers are made of one name, as are the second and fifth; then the two first numbers are multiplied together for a divisor, and the last three numbers are multiplied together for a dividend, and the quotient, or answer, is of the same name with the middle numbers, viz. pounds interest. In the work I find the first quotient, 7*l.* interest; and so I proceed from one denomination to another, till I find the same answer as in the work at two statings, 7*l.* 3*s.* 6*d.*

```
1200) 8610 (7l.
      8400
      ----
       210
        20
      ----
1200) 4200 (3s.
      3600
      ----
       600
        12
      ----
1200) 7200 (6d.
      7200
      ----
```

This method of operation serves to answer all questions in the Double Rule of Three Direct.

The DOUBLE RULE *of* THREE REVERSE.

In this rule you must place your numbers in such order, that your second and fourth numbers may be of one name or denomination, and your third and fifth must likewise agree.

Example.

If 100*l.* principal in 12 months gain 6*l.* interest, what principal will gain 20*l.* interest in 8 months? Stated thus:

	(1)	(2)	(3)	(4)	(5)
	l. per.	mo.	*l.* int.	mo.	*l.* int.
If	100	12	6	8	20
	12			6	
	1200			48	the divisor.
	20				

```
48) 24000 (500l. principal—Answer.
    24000
    -----
```

In this work, the third and fourth numbers are multiplied together for a divisor; and then the first is multiplied by the second, and that product by the the fifth number, and the product, 24000, is divided by 48, and the quotient is 500*l.* principal, which is the answer to the question.

RULES *of* PRACTICE.

These rules are so called from their frequent use and brevity in casting up most sorts of goods or merchandise.

Note, That any question in the Rule of Three, when the first number in the stating is 1, is more briefly done by these Rules, called Practice.

But previous to these rules, it is necessary to have the following tables by heart:

Parts of a Shilling.

d.		
6	is	$\frac{1}{2}$
4	—	$\frac{1}{3}$
3	—	$\frac{1}{4}$
2	—	$\frac{1}{6}$
$1\frac{1}{2}$	—	$\frac{1}{8}$
1	—	$\frac{1}{12}$

Parts of a Pound.

s.	*d.*		
10	0	is	$\frac{1}{2}$
6	8	—	$\frac{1}{3}$
5	0	—	$\frac{1}{4}$
4	0	—	$\frac{1}{5}$
3	4	—	$\frac{1}{6}$
2	6	—	$\frac{1}{8}$
2	0	—	$\frac{1}{10}$
1	8	—	$\frac{1}{12}$
1	0	—	$\frac{1}{20}$

Example 1.

Parts of a shilling.
6*d.* is $\frac{1}{2}$ of 1*s.* 426*lb.* of sugar at 6*d.* per *lb.*

2|0) 21|3

10*l.* 13*s.* Answer.

Here 6*d.* being the price of each pound, and the half of a shilling; therefore the half of 426 is taken, and gives 213*s.* or 10*l.* 13*s.*

Example 2.

4*d.* is $\frac{1}{3}$ of 1*s.* 3) 512*lb.* of cheese, at 4*d.* per *lb.*

2|0) 17|0 8*d.*

Answ. 8*l.* 10*s.* 8*d.*

Here 4*d.* is $\frac{1}{3}$ of a shilling; therefore the third part of 512 is 170*s.* and $\frac{2}{3}$ of a shilling, or 8*d.* remains.

Example 3.

3*d.* is $\frac{1}{4}$ of 1*s.* 4) 246 yards of ribband, at 3*d.* per yard.

2|0) 6|1 6*d.*

3*l.* 1*s.* 6*d.* Answer.

Here the yards are divided by 4, because 3*d.* is the fourth of a shilling, and it quotes 61 shillings, and 2 remains, or two 3-pences: So the answer is, 3*l.* 1*s.* 6*d.*

And thus may any proposed question be answered, belonging to the first table, or parts of a shilling; that is, by dividing the given number by the denominator of the Fraction, and the quotient will be always shillings, which (the remainder being known as above) bring into pounds, by dividing by 20, &c.

When the price of the integer is at a farthing, a halfpenny, or three farthings, more than the value of the pence mentioned, then for those farthings take a proper part of the foregoing quotient found for the pence, and add them together.

Examples.

$4d.$ is $\frac{1}{3}$, | $\frac{1}{2}d.$ is $\frac{1}{8}$ of $4l.$

3) 249 ells of canvas, at $4\frac{1}{2}d.$ per ell.

8) 83
10 $4\frac{1}{2}d.$

2|0) 9|3 $4\frac{1}{2}d.$

£ 4. 13*s.* $4\frac{1}{2}d.$ Answer.

In this example I divide by 3 for the groats, as being the third of one shilling, and it quotes 83*s.* then I consider that a halfpenny is the eighth of $4d.$ therefore I take the eighth part of the groat line, or 83*s.* and that produces 10*s.* and $\frac{1}{8}$ of 3*s.* or $4\frac{1}{2}d.$ then the two lines being added together, make 93*s.* $4\frac{1}{2}d.$ or $4l.$ 13*s.* $4\frac{1}{2}d.$ as in the work.

Parts of a pound.

10*s.* is $\frac{1}{2}$ 2) 254 yards of cloth, at 10*s* per yard.

£ 127 Answer.

Here the half of 254 is taken, because 10*s.* is the half of a pound.

6*s.* 8*d.* is $\frac{1}{3}$ 3) 972 gallons, at 6*s.* 8*d.* per gallon.

£ 324 Answer.

Here the third part is taken, because 6*s.* 8*d.* is the third of a pound; and the answer is $324l.$

And thus may any question proposed be answered, belonging to the second table, or parts of a pound; that is, by dividing the given number by the denominator of the fraction, and the quotient will always be pounds; and if any thing remains, it is always so many halves, thirds, fourths, or fifths, &c. of a pound, according to the denominator that you divide by.

If the price be shillings and pence, or shillings, pence, and farthings, and no even part of a pound; then multiply the given number by the shillings in the price, and take even parts for the pence, or pence and farthings, and add the several lines together, and they will be shillings; which shillings bring into pounds as before.

Examples.

lb. *s.* *d.*
6*d.* $\frac{1}{2}$) 426 at 4 9
4

1704
3*d.* $\frac{1}{2}$ of 6*d.* | 213
106$\frac{1}{2}$ or 6*d.*

2|0) 202|3 6*d.*

£101. 3*s.* 6*d.*

ells. *s.* *d.*
3*d.* $\frac{1}{4}$) 216 at 2 3$\frac{1}{2}$
2 per ell.

432
$\frac{1}{2}$*d.* $\frac{1}{6}$ of 3*d.* | 54
9

2|0) 49|5

£ 24. 15*s.* Answer.

6*d.* $\frac{1}{2}$ of 1*s.* 2) 396 gallons of brandy, at 7*s.* 9*d.* per gallon
7

2772
3*d.* $\frac{1}{2}$ of 6*d.* | 198
99

2|0) 306|9

£ 153. 9*s.* Answer.

When the price is 10*d.* only annex 0 to the right of the given number (which is multiplied by 10) and they are pence; which divide by 12 and 20.

Example. 246*lb.* of hops, at 10*d.* per *lb.*
10

12) 2460

2|0) 20|5

10. 5*s.* Answer.

When the price is 11*d.* set down the quantity twice in the form of Multiplication, and add the two lines together, then divide by 12 and 20.

Example. 426*lb.* of copper, at 11*d.* per *lb.*
426

12) 4686 pence.

2|0) 39|0 (6

£ 19. 10*s.* 6*d.* Answer.

If the price be $11\frac{1}{2}d.$ take half the uppermost line for the halfpenny.

Example. 942lb. of tobacco, at $11\frac{1}{2}d.$ per lb.

2) 942
942
471

12) 10833 pence

2|0) 902|9*d.*

£ 45. 2*s.* 9*d.* Answer.

When the price is 1*s.* only, divide by 20.

Example. 96lb. of tobacco, at 12*d.* per lb.

20) 96 (4*l.* 16*s.* Answer.

When the price is 2*s.* it is done at sight, by doubling the last figure towards the right hand, and setting it apart for shillings; and the figures toward the left are pounds.

Example. 596 gallons of spirits, at 2*s.* per gallon.

£ 59. 12*s.* Answer. Here the double of 6 is 12, and the 59 are pounds.

When the price is an even number of shillings, multiply the numbers of integers by half the price, and double the first figure of the product for shillings, and carry as is usual in Multiplication, and the other figures towards the left hand will be pounds.

Example.

296 yards of cloth, at 14*s.* per yard.
7 the half of 14*s.*

£ 207—4*s.* Answer.

Here 7 times 6 is 42; the double of 2*s.* is 4*s.* &c.

When the price is an odd number of shillings, multiply the given quantity by the number of shillings, and divide the product by 20, and the quotient will be the answer.

Example. 496 gallons of citron-water, at 17*s.* per gallon.
17

2|0) 843|2

£ 421. 12*s.* Answer

I have not here room to speak of the various and almost infinite methods and rules of Practice, (having several other subjects and things to treat on,) but shall leave some general rules, which, if carefully noted, will be of great use to learners; they are these, viz.

1. When the price is parts of a farthing, or of a penny, as $\frac{3}{4}$, $\frac{5}{6}$, $\frac{7}{8}$, &c. then multiply the integers by the numerator, and di-

vide by the denominator, and the result will be either farthings or pence; which reduce to pounds, &c.

2. When the price is pence, and no even part of a shilling, as suppose 5*d*. 7*d*. 8*d*. or 9*d*. then it may be done by taking their parts, as 3*d*. and 2*d*. is 5*d*. and 4*d*. and 3*d*. is 7*d*. and 4*d*. and 4*d*. is 8*d*. and 6*d*. and 3*d*. is 9*d*. but it is an easy and sure way to multiply the given number by 5, 7, 8, or 9, then the product is pence, which reduce to pounds by Reduction.

3. When the price is pence, and parts of a penny; as $1\frac{1}{4}d$. $2\frac{1}{2}d$. or $6\frac{3}{4}d$. then work for the penny by taking the $\frac{1}{12}$, for 2*d*. the $\frac{1}{6}$, and for 6*d*. the $\frac{1}{2}$: then for the farthing, take $\frac{1}{4}$ of the penny line, and for $\frac{1}{2}$, $\frac{1}{4}$ of the twopenny line; and for $\frac{3}{4}$ take $\frac{1}{8}$ of the sixpenny line; then add the results together, and the total will be shillings, which reduce to pounds by dividing by 20. Or by the sure way of bringing the mixed number into the lowest denomination; as $1\frac{1}{4}d$. into 5 farthings, $2\frac{1}{2}d$. into 5 halfpence, and $6\frac{3}{4}d$. into 27 farthings: then multiply the integers by 5, and the product is farthings; or by five halfpence, and the product will be halfpence; or by 27 farthings, and the product will be farthings; which, whether farthings, halfpence, or pence, reduce to pounds, shillings, &c.

4. When the price is shillings and pence, or shillings, pence, and farthings, multiply the integers by the shillings of the price, and take parts of the pence, or pence and farthings, &c.

5. If the price be pounds and shillings, or pounds, shillings, pence and farthings, multiply by the shillings in the price, that is, in the pounds and shillings, and take parts for the pence and farthings.

6. When the number of integers has a fraction annexed, or belonging to them, as $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$, &c. then take $\frac{1}{4}$, $\frac{1}{2}$, or $\frac{3}{4}$, of the price of one of the integers, and add that to the other results.

There are some other rules, such as Barter, or exchanging goods for goods; also Exchange for Coin, Profit, Loss, &c. but most of them being done either by the Rule of Three, or by the rules of Practice, it is therefore here unnecessary to enlarge upon them.

Of VULGAR FRACTIONS.

Note, *This character* (=) *signifies equal,* (+) *plus or more,* (—) *minus or less,* (×) *multiplied by,* (÷) *divided by.*

What Fractions are, has already been hinted in the Rule of Division, from whence they arise, for the remainder is a part of a dividend remaining undivided; as admit 54*l*. is divided into 12 equal parts, the quotient is 4, and the remainder 6: so that here 6 remains as yet undivided by 12, and is therefore 6 parts in 12, or 6 twelfths, equal to a half; for 6 is the $\frac{1}{2}$ of 12; and the remainders are usually set down in this form $\frac{6}{12}$; and when so, the expression is called a fraction, whose parts are understood by these names, viz.

6 numerator.

12 denominator.

The numerator is above the short line, and shews the number of parts signified by the fraction; and the denominator stands under the line, and declares the number of parts into which the integer or whole number is divided; as above, 54*l.* is divided into 12 parts, and the quotient says there are 4 times 12 contained in 54, and 6 remains, which is 6 twelfths of a pound, or 10*s.* as abovesaid.

Fractions are thus set down and read, viz. $\frac{1}{4}$, one fourth, $\frac{1}{2}$ one half; $\frac{1}{3}$, one third; $\frac{1}{5}$, one-fifth; $\frac{1}{6}$, one-sixth; $\frac{2}{3}$, two thirds; $\frac{2}{4}$, two-fourths; $\frac{2}{6}$, two-sixths; $\frac{5}{7}$, five-sevenths, &c.

Fractions are either proper or improper: a proper fraction has its numerator less than the denominator, as $\frac{5}{8}$, five-eighths; $\frac{24}{56}$, twenty-four fifty-sixths, &c.

An improper fraction has its numerator greater than the denominator, as $\frac{7}{3}$, seven-thirds; $\frac{43}{15}$, forty-three fifteenths, &c.

Again, fractions are either simple or compound; simple, when a part of an integer or thing has but one numerator, and one denominator; as $\frac{3}{4}$ of a pound sterling, $\frac{1}{2}$ of a C. weight, $\frac{2}{3}$ of a tun, $\frac{5}{6}$ of a gallon, &c. Compound, is a fraction of a fraction, as the $\frac{1}{2}$ of a $\frac{1}{4}$ of a pound sterling, which is equal to half a crown; or when it is divided into any number of parts, and those parts again subdivided into parts, &c.

REDUCTION *of* VULGAR FRACTIONS.

1. To reduce a mixed number to an improper fraction.

Rule.

Multiply the integer by the denominator, and take in the numerator for the numerator of the fraction, and the denominator will be the same with that of the fractional quantity.

Example.

Reduce $12\frac{3}{4}$ gallons to an improper fraction, thus:

$12 \times 4 \times 3 = \frac{51}{4}$ gallons, Answer.

2. To reduce an improper fraction to a whole or mixed number.

Rule. Divide the numerator by the denominator.

Example.

Reduce $\frac{51}{4}$ gallons to a whole or mixed number.

$51 \div 4 = 12\frac{3}{4}$ gallons, Answer.

Here 12 gallons is the whole number, $\frac{3}{4}$ the fraction, the same with three quarts.

3. To reduce fractions to a common denominator.

Rule. Multiply the numerator of each fraction into all the de-

nominators except its own, for a new numerator, and all the denominators together for a common denominator.

Example.

Reduce $\frac{2}{3}$, $\frac{3}{4}$, and $\frac{5}{6}$ of any integer to a common denominator.

$\frac{2}{3}$, $\frac{3}{4}$, $\frac{5}{6}$, $= \frac{48}{72}$ $\frac{54}{72}$, $\frac{60}{72}$

I begin by saying, twice 4 is 8, and 6 times 8 is 48, for a new numerator to $\frac{2}{3}$; then 3 times 3 is 9, and 6 times 9 is 54, for a new numerator to $\frac{3}{4}$; lastly, 5 times 4 is 20, and 3 times 20 is 60, for a new numerator to $\frac{5}{6}$: then I find the common denominator by saying 3 times 4 is 12, and 6 times 12 is 72, the common denominator: so that $\frac{48}{72}$ is equal to $\frac{2}{3}$, $\frac{54}{72}$ to $\frac{3}{4}$, and $\frac{60}{72}$ to $\frac{5}{6}$.

4. To reduce a fraction to its lowest term.

Rule.

If they are even numbers, take half of the numerator and denominator, as long as you can; and then divide them by any digit-number (i. e. 3, 4, 5, 6, &c.) that will leave no remainder in either.

Example 1.

Reduce $\frac{36}{48}$ to its lowest terms.

2	2	3	
36	18	9	3
48	24	12	4

I begin by saying, the half of 36 is 18, and the half of 48 is 24; and then the half of 18 is 9, and the half of 24 is 12, and the fraction $\frac{36}{48}$ is reduced to $\frac{9}{12}$, which cannot be halved again without a remainder, (for though the denominator 12 may be halved, yet the numerator 9 cannot;) we must therefore try some other number by which the numerator and denominator may be both divided without leaving a remainder in either; and after a little thought we find that 3 will divide both, and so the fraction will be reduced to $\frac{3}{4}$, the lowest term possible, which is equal in value to $\frac{36}{48}$.

Example 2.

Reduce $\frac{56}{84}$ into its lowest terms: say, the half of 56 is 28, and the half of 84 is 42; and then the half of 28 is 14; and the half of 42 is 21. So the fraction $\frac{56}{84}$ is reduced to $\frac{14}{21}$. And since they cannot be halved any longer, for though you can half 14, yet you cannot 21 without a remainder, try therefore to divide them by some other digit-number; and you will find that 7 will divide both numerator and denominator without any remainder; then say, the 7's in 14 twice; and the 7's in 21 three times: so that the fraction $\frac{56}{84}$, reduced into its lowest terms, will be $\frac{2}{3}$, which is of the same value as $\frac{56}{84}$. The work is done in this form:

2	2	7	
56	28	14	2
84	42	21	3

And the proof that $\frac{2}{3}$ is of the same value with $\frac{56}{84}$ will appear by multiplying any integer by the numerator of each fraction, and dividing by the denominator of each fraction.

Example.

Let the integer be 1*l.* sterling, or 20*s.*

The fraction $\frac{2}{3}$

s.
20
2

3) 40

13—4*d.*

The fraction $\frac{56}{84}$

s.
20
56

84) 1120 (13*s.*
84

280
252

28
12

84) 336 (4*d.*
336

(0)

} 13*s.* 4*d.*

Here it is manifest, that by working a fraction in its lowest terms, much time and figures are saved. In one operation, 20, the integer, is multiplied by 2, and the product, 40, divided by 3, and there remains 1, or $\frac{1}{3}$ of a shilling, or a groat, as in the other work.

There are other methods of reducing a fraction into its lowest terms; but none so ready as the foregoing, where it can be used.

5. To reduce a compound fraction into a simple one of the same value.

Rule.

Multiply the numerators together for a new numerator, and the denominators together for a new denominator.

Example.

Reduce $\frac{2}{3}$ of $\frac{3}{4}$ of $\frac{5}{6}$ of a pound sterling into a simple fraction.—Say, twice 3 is 6, and 5 times 6 is 30, the numerator; then 3 times 4 is 12, and 6 times 12 is 72, the denominator: So $\frac{30}{72}$ of a pound is equivalent to $\frac{2}{3}$ of $\frac{3}{4}$ of $\frac{5}{6}$ of a pound. Thus proved, $\frac{5}{6}$ of a pound is 16*s.* 8*d.* and $\frac{3}{4}$ of 16*s.* 8*d.* is 12*s.* 6*d.* and $\frac{2}{3}$ of 12*s.* 6*d.* is 8*s.* 4*d.* the answer. And multiplying 20*s.* by 30, and dividing by 72, gives the same answer, as in the following work is plain.

20
30

72) 600 (8*s.*
576

24 remains
12 multiply

72) 288 (4*d.*
288

(0)

} 8*s.* 4*d.*

6. To find the value of any fraction, whether of coin, weight, or measure.

Rule. Multiply the integer by the numerator, and divide by the denominator; and if any thing remains, multiply it by the number of units of the next inferior denomination.

Example.

What is $\frac{30}{72}$ of a pound, or 20*s.*? The operation of the foregoing example of proof to the compound fraction of $\frac{2}{3}$, of $\frac{3}{4}$, of $\frac{5}{6}$, answers this question, and need not be repeated.

Again, What is $\frac{5}{6}$ of a ton weight?

C.
20 the integer.
5 the numerator.

The denominator 6) 100

C. 16—4 remains.
4 qrs. 1 C.

6) 16

qrs. 2—4 remains.
28 lb. 1 qr.

6) 112

Ans. 16 C. 2 qrs. 18 lb. $\frac{4}{6}$ lb. 18—$\frac{4}{6}$

Here the integer 20 C. is multiplied by the numerator 5, and the product 100 divided by the denominator 6, and the remainder 4 is multiplied by the parts of the next inferior denomination, &c. and the answer is 16 C. 2 qrs. 18 lb. $\frac{4}{6}$, or $\frac{2}{3}$ of a pound weight, as in the work.

ADDITION *of* VULGAR FRACTIONS.

If the fractions to be added have a common denominator, add the numerators together for a numerator, and place it over the common denominator; but if the denominators of the several fractions to be added are different, first reduce them to a common denominator, and then proceed as directed above.

Example 1.

Add $\frac{2}{5}$, $\frac{3}{5}$, and $\frac{4}{5}$, of a pound sterling together.—Say, 2 and 3 is 5, and 4 is 9, the numerator; which place over 5, the common denominator, thus $\frac{9}{5}$, and this improper fraction $\frac{9}{5}$, is in value 36*s.* for 9 times 4*s.* (the 5th of a pound) is 36*s.* for if the numerator 9 be divided by the denominator 5, I say, the 5's in 9 once, and 4 remains, which is $\frac{4}{5}$ of a pound, or 16*s.*

5) 9

£1 $\frac{4}{5}$

Example 2.

Add $\frac{3}{4}$, $\frac{2}{7}$, and $\frac{5}{6}$, together.

$\frac{3}{4}$, $\frac{2}{7}$, $\frac{5}{6}$, $=\frac{126}{168}$, $\frac{48}{168}$, $\frac{140}{168}$

$\frac{126}{168}+\frac{48}{168}+\frac{140}{168}=\frac{314}{168}=1\frac{146}{168}$ Answer.

Here I reduce the several fractions to a common denominator, and then add the numerators together, and divide the sum by the common denominator.

2. When mixed numbers are to be added, work with the fractional parts as before, and carry the fractional value to the whole numbers.

Example.

Add $25\frac{3}{4}l.$ to $12\frac{1}{4}l.$ thus $25\frac{3}{4}$

$12\frac{1}{4}$

£38 Answer.

Here 1 and 3 the numerator, make 4, and $\frac{4}{4}$ is 1, and 2 is 3, and 5 makes 8; and 1 and 2 is 3: so the answer is 38. Or they may be reduced into improper fractions, thus:

$25\frac{3}{4}=\frac{103}{4}$ $12\frac{1}{4}=\frac{49}{4}$

$\frac{103}{4}+\frac{49}{4}=\frac{152}{4}=38$ pounds.

Here the numerators are added, and their total is 152, which divided by 4, the common denominator, quotes 38 pounds, the same answer as above.

3. When compound fractions are to be added to simple ones, educe the compound fraction to a simple one, as before directed; and then proceed as above.

Example.

Add $\frac{2}{8}$ and $\frac{3}{8}$ to $\frac{1}{2}$ of $\frac{2}{4}$ of a pound; thus once 2 is 2, and twice 4 is 8, therefore $\frac{2}{8}$ is equal to the compound fraction. Then add, saying, 2 and 3 is 5, and 2 is 7, the new numerator; and $\frac{7}{8}$, equal in value to 17*s.* 6*d.* will be the answer.

SUBTRACTION *of* VULGAR FRACTIONS.

In this rule the fractions must have a common denominator, or be reduced to one, before a deduction can be made.

Example.

What is the difference between $\frac{1}{4}$ and $\frac{3}{4}$? Answer $\frac{2}{4}$; which may be proved by addition, for $\frac{1}{4}$ and $\frac{2}{4}$ make $\frac{3}{4}$.

Note, The difference between the numerators is the difference of the fractions.

Again, from $\frac{3}{4}$ of a pound take $\frac{5}{12}$: Here the fractions are to be reduced to a common denominator; 36 is the first numerator, and 20 the second numerator, their difference is 16; and 48 is the common denominator: so that $\frac{16}{48}$, or $\frac{1}{3}$ in its lowest terms, is the difference between $\frac{3}{4}$ of a pound, and $\frac{5}{12}$ of a pound.

To subtract a compound fraction from a simple one.

Rule. Reduce the compound fraction to a simple one, and then work as before.

Example.

From $\frac{13}{14}$ take $\frac{2}{3}$ of $\frac{8}{9}$: Say, twice 8 is 16, and 3 times 9 is 27, therefore $\frac{16}{27}$, is equal to the compound fraction. Then $\frac{13}{14}$ and $\frac{16}{27}$ must be reduced to a common denominator thus:—13 times 27 is 351, the first numerator; 16 times 14 is 224, the second numerator; and 14 times 27 is 378, the common denominator. Then subtract 224, the second numerator, from 351, the first numerator, and the remainder is 127, which place over 378, the common denominator, thus $\frac{127}{378}$ answer.

When a simple fraction is to be deducted from a whole number.

Rule. First multiply the whole number by as many units as are contained in the denominator of the fraction, and then subtract the numerator of the fraction from the product, and the remainder will be the numerator of the answer, as below:

Example.

From 12*l.* take $\frac{5}{8}$, thus:

First, by multiplying 12*l.* by 8, you will have $\frac{96}{8}$ to take from $\frac{5}{8}$, and the result will be $\frac{91}{8}$*l.* $11\frac{}{8}$, or 11*l.* 7*s.* 6*d.* answer.

MULTIPLICATION *of* VULGAR FRACTIONS.

Rule. Multiply the numerators into one another for the numerator of the product; and then do the same by the denominators, for the denominator of the product.

Example.

Multiply $\frac{3}{4}$ of a pound by $\frac{5}{6}$ of ditto: Say 3 times 5 is 15, the numerator; and 4 times 6 is 24, the denominator: So the answer is $\frac{15}{24}$, or in the lowest term $\frac{5}{8}$.

You are to note, That multiplication in fractions lessens the product, though in whole numbers it augments it, as above: $\frac{5}{8}$, or 12*s.* 6*d.* is less than $\frac{5}{6}$, or 16*s.* 8*d.* and also less than the other fraction $\frac{3}{4}$, or 15*s.* The reason of which I have not here room to insist on; but it is given in Fisher's Arithmetic, in Multiplication of Vulgar Fractions; to which book I refer the reader for that, and sundry enlargements in the several rules of the science of arithmetic.

2. To multiply a whole number by a fraction.

Rule. Multiply the integer by the numerator of the fraction, and place the product over the denominator.

Example.

Multiply 56*l.* by $\frac{3}{4}$ —— $\frac{56}{1} \times \frac{3}{4} = \frac{168}{4}$

This improper fraction $\frac{168}{4}$, reduced according to rule, makes but 42*l.* which is less than 56, and confirms what was before asserted, viz. that Multiplication of Fractions lessens the product, &c.

To multiply a simple by a compound fraction.

Rule. Reduce the compound fraction to a simple one, as before taught, and work as above.

Example.

Multiply $\frac{6}{8}$ of a pound by $\frac{2}{3}$ of $\frac{3}{4}$ of a pound: Say, 6 times 6 is 36, and 8 times 12 is 96. So that the answer is $\frac{36}{96}$, or $\frac{3}{8}$ in its lowest terms; equal to 7*s.* 6*d.*

DIVISION *of* VULGAR FRACTIONS.

Rule. Multiply the numerator of the divisor into the denominator of the dividend, and the product is the denominator of the quotient; and then multiply the denominator of the divisor into the numerator of the dividend, and the product will be the numerator of the quotient.

Example.

Divide $\frac{15}{16}$ by $\frac{2}{3}$ —— $\frac{15}{16} \div \frac{2}{3} = \frac{45}{32} = 1\frac{13}{32}$ quotient.

Here 16, multiplied by 2, gives 32; and 15 by 3, gives 45; so that the quotient is $\frac{45}{32}$, equal to $1\frac{13}{32}$, as in the work. Again, suppose $\frac{42}{36}$ was divided by $\frac{2}{3}$, the quotient will be $\frac{126}{72}$, equal to $1\frac{3}{4}$. And so for any other example.

Of DECIMAL FRACTIONS.

In Decimal Fractions the integer, or whole thing, as one pound, one yard, one gallon, &c. is supposed to be divided into ten equal parts, and those parts into tenths, and so on, without end.

So that the denominator of a decimal, being always known to consist of an unit, with as many ciphers as the numerator has places, is therefore never set down; the parts being only distinguished from the whole number, by a comma prefixed; thus, ,5 which stands for $\frac{5}{10}$, ,25 for $\frac{25}{100}$, ,123 for $\frac{123}{1000}$.

But the different value of figures appears plainer by the foling table.

Whole numbers.							Decimal parts.						
7	6	5	4	3	2	1	2	3	4	5	6	7	
Millions.	*C Thousands.*	*X Thousands.*	*Thousands.*	*Hundreds.*	*Tens.*	*Units.*	*Parts of Tens.*	*Parts of Hundreds.*	*Parts of Thousands.*	*Parts of X Thousands.*	*Parts of C Thousands.*	*Parts of Millions.*	

From which it plainly appears, that as whole numbers increase in a ten-fold proportion to the left hand, Decimal parts decrease in a ten-fold proportion to the right hand; so that ciphers placed before Decimal parts decrease their value, by removing them farther from the comma, or unit's place, thus, ,5 is 5 parts of 10, or $\frac{5}{10}$; ,05 is 5 parts of 100, or $\frac{5}{100}$; ,005, is 5 parts of 1000, or $\frac{5}{1000}$; ,0005, is 5 parts of 10000, or $\frac{5}{10000}$. But ciphers after decimal parts do not alter their value. For, ,5, ,50, ,500, &c. are each but $\frac{5}{10}$ of the unit.

REDUCTION *of* DECIMAL FRACTIONS.

Example 1.

Reduce $\frac{3}{4}$ of a pound sterling to a decimal.

4) 3,00
,75

that is, 75 hundreds, equal to 3 qrs. of any thing, whether money, weight, measure, &c. as being $\frac{3}{4}$ of 100; and so 25 hundreds is, in decimals, the quarter of any thing, as being the $\frac{1}{4}$ of a 100; and five-tenths expresses the half of any thing, as being the $\frac{1}{2}$ of 10.

In Reduction of Decimals sometimes it happens, that a cipher or ciphers must be placed to the left hand of the decimal, to supply the defect of the want of places in the quotient of Division. In this case always remember, that so many ciphers as you annex to the denominator of the vulgar fraction, so many places you must point off in the quotient towards the left hand; but if there be not so many places to point off, then you must supply the defect by placing a cipher or ciphers to the left of the decimal.

Example 2.

Reduce 9*d.* or $\frac{9}{240}$ to the decimal of a pound sterling, thus:

240) 9,0000 (,0375
720.
1800
1680
1200
1200
(0)

Here are but three places in the quotient, viz. 375; and therefore I cannot point off 4 for the four ciphers annexed to 9; wherefore I prefix 0 to the left of the quotient 375, thus, ,0375, and then it is 375 ten thousand parts of an integer.

The more ciphers you annex, the greater you bring your decimal to the truth: but in most cases, four ciphers annexed are sufficient. But when you are to reduce $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$, as above, of an integer to a decimal, or any number of shillings to a decimal of a pound, two ciphers are sufficient. One example more.

Example 3.

Reduce 3 farthings to the decimal of a pound, that is, the vulgar fraction $\frac{3}{960}$ farthings being a pound.

960) 3,000000 (,003125. The work being performed according to Division, with two ciphers prefixed, quotes ,003125, or by 3125 ten hundred thousandth parts of a pound. By the same method, the vulgar fractions of weight, measure, &c. are reduced to decimals.

Example 4.

How is 12 pounds weight expressed in the decimal of 1 cwt. Avoirdupois, or 112lb.? The vulgar fraction is $\frac{12}{112}$, and the decimal, ,1071, found as before, thus:

112) 12,0000 (,1071
112
80, &c.

The remainder, 43, is not worth notice, being less than the 100000 part of an unit, or 1.

Example 5.

How is 73 days brought to the decimal of a year, by vulgar fractions thus expressed $\frac{73}{365}$?

365) 73,0 (,2 Answer, 2 tenths.
730
(0)

VALUATION *of* DECIMALS.

To find the value of a Decimal Fraction, whether of money, weight, measure, &c.

Rule. Multiply the decimal given, by the units contained in the next inferior denomination, and point off as many places from the right-hand as you have in your decimal; so those figures towards the left of the point are integers, or whole numbers; and those on the other side, towards the right hand, are parts of 1 or unity; that is, so many tenths, hundredths, thousandths, or ten thousandths, of one of those integers, whether a pound, a shilling, or a penny, &c. or of a ton, a hundred, a quarter, or a pound weight, &c. And so many of any other integer, of what quality or kind soever.

Example. 2.

4,76 part of a pound sterling.
20 shillings a pound.

9,520
12 pence one shilling.

Answer, 9*s.* 6*d.* 960 parts, or near $\frac{1}{4}$ of 1*d.*

6,240
4 farthings one penny.

,960 parts, or almost $\frac{1}{4}$ of a 1*d.*

,476 parts of a ton weight.
20 C. 1 ton.

9,520
4 qrs. 1. C.

2,080

Answer, 9 C. 2 qrs. 2 lb. 240 pts.

28lb. 1 qr. of a C.

2,240

In the example of money, I multiply the fraction by 20, and point off 520 for the three places in the decimal, &c. and the answer is 9*s.* 6$\frac{1}{4}$*d.* nearly.

In the example of weight, I proceed as in that of money, (the fraction being the same,) but different with respect to the inferior denominations, and the answer is 9 C. 2 qrs. 2 lb. $\frac{240}{1000}$ of a pound weight.

To find the true value of a decimal in money in a shorter method, viz.

Rule. Always account the double of the first figure (to the left-hand) for shillings; and if the next to it be 5, reckon one shilling more; and whatever is above 5, call every one ten, and the next figure so many ones as it contains; which tens and ones call farthings; and for every 24, abate one: as admit the last example of money, viz. 476; the double of 4 is 8, and there

being one 5 in 7, (the next figure,) I reckon 1*s.* more, which makes 9*s.* and there being 2 (in the 7) above 5, they are to be accounted two tens, or twenty; which, with the next figure 6 being so many ones, make 26 farthings; and abating 1 for 24, they give 6*d.* and a farthing more.

ADDITION *of* DECIMALS

Is the same in operation as in whole numbers; only in setting down, care must be taken that the decimal parts stand respectively under like parts; that is, primes under primes, seconds under seconds, thirds under thirds, &c. and the integers stand as in whole numbers.

Example.

Integers.	Primes. Seconds. Thirds.	Parts.	Primes. Seconds. Thirds. Fourths. Fifths.
246	,426	,4796	,47962
74	,42	,42	,0642
0	,06	,076	,006
65	,794	,0004	,7
42	,005	,5	,9
428	,705	1,4760	2,14982

Note. There must be as many places pointed off, as there are in that number which has most decimal places.

The casting up of the foregoing examples is the same with Addition of one denomination, in whole numbers. The total of the first (supposing them pounds sterling) is 428*l.* and ,705 parts. The second is 1*l.* and ,4760 parts. And the third is 2*l.* and ,14982 parts.

SUBTRACTION *of* DECIMALS.

The numbers must be placed as before in Addition, and then proceed as in Subtraction of Numbers of one Denomination.

l. pts.	l. pts.	
46,51	140,42	3125,0
9,24	91,7462	51,7912
37,27	48,6738	3073,2088

MULTIPLICATION *of* DECIMALS.

Here the placing the numbers, and the operation, is the very same as in whole numbers; remember only to point off, towards the right hand, so many places for Decimals, as you have decimal places in both multiplicand and multiplier.

Example.

(1)	(2)	(3)	(4)
24,6	4602	,2796	4,001
2,5	,075	26	27
1230	23010	16776	35007
492	32214	5592	10002
61,50	345,150	7,2696	135,027

(5)	(6)	(7)	(8)
,07214	,083	4,25	,000079
,006	,16	1,09	,00109
,00043284	498	3825	711
	83	4250	790
	,01328	4,6325	,00000008611

Note, That where there are not a competent number of figures, or places to point off, such defect is supplied with ciphers annexed to the left hand; as in the 5th, 6th, and 8th examples, according to what was before hinted in reducing a Vulgar Fraction to a Decimal.

DIVISION *of* DECIMALS

Is the same in operation as in whole numbers; the only difficulty is to know how many decimal places to point off, towards the left hand of the quotient; to which end, remember this rule: Observe how many decimal places there are, both in the divisor and in the dividend, and find the difference; and whatsoever it is, so many places must be pointed off to the right hand of the quotient.

Example.

Divide 12,345670 by 6,789.

```
6,789) 12,345670 (1,818
       6789
       -----
       55566
       54312
       -----
       12547
        6789
       -----
       57580
       54312
       -----
        3268
```

In this example, the dividend has three decimal places more than the divisor, wherefore I point off three places to the right hand of the quotient, viz. ,818; so the quotient is 1 integer and 818 parts.

Divide 3,46000 by 1,23.

```
1,23) 3,46000 (2,813
      246
      ----
      1000
       984
      ----
       160
       123
      ----
        370
        369
      ----
         (1)
```

Here the difference between the decimal places in the divisor and dividend is three places, as in the foregoing example; therefore 813 is pointed off for the decimal fraction; and the quotient is 2 integers, and 813 thousandth of an integer.

BOOK-KEEPING.

The next qualification to fit a man for business, after Arithmetic, is the Art of Book-keeping, or Merchants' Accompts, after the Italian manner, by way of double entry.

It is not without good reason, that most people of business and ingenuity are desirous to be masters of this art; for if we consider the satisfaction that naturally arises from an account well kept,

the pleasure that accrues to a person by seeing what he gains by each species of goods he deals in, and his whole profit by a year's trade; and thereby also to know the true state of his affairs and circumstances; so that he may, according to discretion, retrench or enlarge his expences, &c. as he shall think fit.

This Art of Book-keeping, or Merchants' Accompts, is talked of by many, but truly understood but by very few; for every petty schoolmaster in any by-corner, will be sure to have Merchants' Accompts expressed on his sign, as a principal article of his ability in teaching: though strictly speaking, for want of the practical part, he knows scarcely any thing of the matter, and is consequently incapable of teaching it.

Instructions, Notes, Rules, and Directions, for the right ordering and keeping Merchants' Accompts, by the excellent order of Charge and Discharge, commonly called Debtor and Creditor.

Of the Books in Use.

The books of principal use are the Waste-Book, (by some called the Memorial,) Journal, and Ledger.

Waste Book.

In this Book must be daily written whatever occurs in the way of trade; buying, selling, receiving, delivering, bargaining, shipping, &c. without omission of any thing either bought, sold, or borrowed, &c.

The Waste-Book is ruled with one marginal line, and three lines, for pounds, shillings, and pence; and the day of the month, and year of our Lord, is inserted in the middle of the page. In this book any one may write, and on occasion any thing may be blotted out, if not well entered, or any error be made.

Journal.

Into this book every article is brought out of the Waste-Book; but, in other terms, in a better style, and in a fairer hand, without any alteration of ciphers and figures; and every parcel, one after another, are promiscuously set without intermission, to make the book, or several entries of it, of more credit and validity, in case of any law dispute, or any other controversy that may happen between Merchant and Merchant. In this book you are to distinguish the Debtor and Creditor, (or, in other terms, the Debts and Credits.) And to this book you must have recourse for the particulars of an account, which in the Ledger are entered in one line. In this book also, the day of the month is usually placed in the middle of the page; it it ruled with double marginal lines, for reference to the Ledger, and with three lines for *l. s. d.* as the Waste-Book.

Of the Ledger.

From the Journal, or Day-Book, all matters or things are posted into the Ledger, which by the Spaniards is called *El Libro Grande,* as being the biggest book, or chief of accounts. The left-hand side of this book is called the Debtor, and the right the Creditor side; and the Numbers or Folios on each side must be alike, as 45 Debtor, and also 45 Creditor. The day of the month (in this book) is set in a narrower column on the left hand, and the month on the left of that; but where I kept books, the number in the narrow column referred to the Journal page, and the month and day were placed in the broad column, to the right of that; and at the head of each folio is the name of the place of residence, and the year of our Lord; as thus:

London, Anno————————1821.

But the example of these several books hereafter following will make the foregoing hints of them much more intelligible. The following is a general rule, upon which most of the entries in book-keeping depend, viz.

All things Received, or the Receivers, are Debtors to the Delivered, or the Deliverer.

Waste-book Entry.

		£	s.	
	London, March 1, 1821.			
	Bought of William Wilkins, of Norton Falgate, 120 yards of white sarcenet, at 2*s.* 3*d.* per yard, to pay in two months - - - - - - - - - - - - -	13	10	
1	*The Journal Entry of the same.*			
—	Wrought silk, debtor to William Wilkins,	£13	10	
2	for 120 yards of white sarcenet, at 2*s.* 3*d.* per yard, to pay in two months - - - - - - - - - -	13	10	—
	In this example the wrought silks are received, and therefore debtor to William Wilkins the deliverer.			

(Again.)

Waste-book Entry.

October 1.

Sold Henry Harrington, 246lb. nett of Indigo, at 6*s.* 6*d.* per lb. to pay in three months - - -	79	19	—

Journal Entry.

		£	s.	d.
3	Henry Harrington Dr. to Indigo, for 246lb. nett,			
—	at 6*s.* 6*d.* per lb. to pay in three months - - -	79	19	—
4				

(Once more.)

Waste-Book Entry.

Bought of George Goodinch, sen. viz.

Cheshire cheese 430½ C. at 23*s.* 4*d.* per C. - - - - - - - - - -	£502	5	
Butter, 50 firkins, qt. nett 2800lb. at 3*d.* per lb. - - - - - - - -	35	0	
To pay in 6 months- - - - - - - - - - - -	537	5	—

Journal Entry.

4	Sundry Accounts Dr. to George Goodinch, - -					
—	£537 5————					
	Cheshire cheese, for 430½ C. at 23*s.* 4*d.* per C. - - - -	£502	5			
	Butter, for 50 firkins, qt. nett 2800lb. at 3*d.* per lb. - - - - -	35	0			
	To pay in 6 months - - - - - - - - - - - -			537	5	—

Waste-book.

Sold to James Jenkins, viz.

White sarcenet 50 yards at 3s. per yard - - - - -	£7	10	0		
Indigo 50 pounds, at 7*s.* per pound - - -	17	10	0		
				25	—

Journal Entry of the last.

6	James Jenkins Debtor to sundry Accounts, viz.					
—	To white sarcenet, for 50 yards, at					
7	3*s.* per yard - - - - - - - - - - -	£7	10	0		
	To Indigo, for 50lb.					
8	at 7*s.* per lb. - - - - - - - - - - -	17	10	0		
					25	—

From these few examples of entry, it may be observed, that an experienced person in accounts, and a good writer, may keep a Journal without a Waste-book, or Waste-book without a Journal, since they both import one and the same thing, though they differ a little in words, or expression.

But, however, I shall give methods of keeping each as far as room will give me leave.

(1)

The Waste-book.

London, October 1*st.*————1821.

An Inventory of all the Money, Goods, and Debts, belonging to me A. B. of London, Merchant.

		£.	s.	d.
In cash - - - - - - - - - - - - - - - -	£3500 0 0			
In tobacco 4726lb. at 9*d.* per lb. - - - - - - - - - - - - - - - -	177 4 6			
In broad-cloth 6 pieces, at 50*s.* per piece - - - - - - - - - - - -	15 0 0			
Dowlass 1000 ells, at 2*s.* 4*d.* per ell - - - - - - - - - - - -	116 13 4			
Canary wines 9 pipes, at 30*l.* per pipe - - - - - - - - - - - -	270 0 0			
Due to me from Henry Bland, per bond - - - - - - - - - - - - - - -	60 0 0	4138	17	10

(1)

Journal.

Inventory, &c.

Sundry Accts. Dr. to Stock————		4138	17	10			
	viz.						
1	Cash - - - - - - - - - - - - - - -	£3500	0	0			
	Tobacco for 4726lb. at 9*d.* per lb. - - - - - - - - - - - - - - -	177	4	6			
1	Broad-cloths for 6 pieces, at 50*s.* per piece - - - - - - - -	15	0	0			
1	Dowlass for 1000 ells, at 2*s.* 4*d.* per ell - - - - - - - - - -	116	13	4			
1	Canary wines for 9 pipes, 30*l.* per pipe - - - - - - - - - -	270	0	0			
3	Henry Bland, due on Bond, - - -	60	0	0			
					4138	17	10

I shall make one page answer for Waste-book and Journal Entries, to save room, and also to have both methods of entry under eye, to make them more intelligibly useful to the reader, he hereby not being obliged to turn over the leaf to see their difference of entry.

Waste-book.

London, October 1st.——1821.

					£.	s.	d.
	Owing to William Webb, by note of my hand	£	50	0 0			
	Ditto to Roger Ruff, the balance of his account		16	12 4			
	Ditto to Henry Hern, due the 4th of May next		62	0 0			
					128	12	4
	Journal.						
2	Stock debtor to sundry accounts,						
—	128*l.* 12*s.* 4*d.* viz.						
3	To William Webb, by note of my hand	£	50	0 0			
4	To Roger Ruff, for the balance of his account		16	12 4			
5	To Henry Hern, due the 4th of May next		62	0 0			
					128	12	4

Waste-book.

London, February 2.——1821.

					£.	s.	d.
	Sold Thomas Townshend, viz.						
	246lb. of Virginia cut tobacco, at 14*d.* per lb.	£	14	7 0			
	460 ells of dowlass, at 3*s.* per ell		69	0 0			
					83	7	—
	February 2.						
1	*Journal.*						
—	Thomas Townshend debtor to sundries,						
6	viz.						
1	To tobacco, for 246lb. at 14*d.* per lb.	£	14	7 0			
2	To dowlass, for 460 ells, at 3*s.* per ell		69	0 0			
					83	7	—

The short lines ruled against the Journal entries are, or may be termed, posting lines, and the figure on the top of the lines denotes the folio of the Ledger, where the debtor is entered; and the figure under the line shews the folio of the Ledger, where

the credit is entered; and the other smaller figures against the sundry debtors, or sundry creditors, whether goods or persons,) shew also in what folios of the Ledger they are posted.

The accounts of persons and things are kept in the Ledger, on opposite pages, in which those which in the Journal are said to be debtors, are entered on the left-hand page, with the word *To*; and those to which they are said to be creditors, are entered on the right-hand page, with the word *By*.

For instance, the last Journal entry should be posted on the left hand, or debtor's side, of the account of Canary wines. Thus:

1821.
Feb. 24. To Leonard Legge———4 Pipes———£112 : 0 : 0

And the same should be posted on the right hand, or creditor side of the account of Leonard Legge. Thus:

1821.
Feb. 24. By Canary wines, to pay in six months £112 : 0 : 0

There are several other books used by merchants besides those three before mentioned; as the Cash-book, which is ruled as the Ledger, and folio'd likewise, wherein all receipts of money are entered on the left-hand folio, and payments on the right; specifying in every entry the day of the month, (the year being set on the top,) for what and for whose account the money was received or paid; and the total debit or credit on each side is to be posted into the Ledger to the account of cash therein, in one line of either side, viz. to, or by sundry accounts, as per Cash-book, folio, &c. which is to be done once a month, or at discretion, and the particulars of each side, article by article, are to be posted into the Ledger to the proper accounts unto which they belong, with references in the Cash-book, to the several folios in the Ledger; and carry the balance over-leaf into the Cash-book; by which you may know at any time what cash you have, or ought to have, by you.

Another book is a Book of Charges of merchandise, wherein is to be entered the custom and petty charges of any goods shipped; as porterage, wharfage, warehouse-room, &c. which once a month is transferred into the Cash-book on the credit side, making reference to the book of charges of merchandise; and likewise the same in the debtor side of the same account in the Ledger for the amount thereof.

The next book I shall name is the Invoice Book, or book of Factories. In this book is to be copied all Invoices of goods shipped, either for accounts proper or portable; and also of goods received from abroad, which must always be entered on the left side, leaving the right side blank; and on the advice of the disposal of goods sent abroad, and also on the sale of goods received from abroad, enter them on the blank or right side; so at the first view may be seen how the account stands, &c.

The next is a Bill-book, wherein are entered bills of exchange accepted, and when they become due; and when paid, they should be made so in the margin.

The next book is of household expences, for the monthly charges spent in house-keeping; likewise apparel, house rent, servants' wages, and pocket expences; and this may be monthly summed up, and carried to the credit of cash.

Besides the above-mentioned, there must be a book to copy all letters sent abroad, or beyond the sea; wherein the name of the person or persons to whom the letter is sent, must be written pretty full, for the readier finding of the same.

The next (and what is very necessary) is a Receipt-book, wherein are given receipts for money paid, and expressed for whose account or use, or for what it is received; to which the receiving person must set his name for himself or some other with the year and day of the month on the top.

Lastly, A Note or Memorandum-book, to minute down affairs that occur, for the better help of the memory; and is of great use, where there is a multiplicity of business.

Having given an account of the several books and their use, the next thing necessary will be, to give some few rules of aid to enable the book-keeper to make proper entries, and to distinguish the several debtors and creditors, viz.

First, For money received, make Cash Dr to the party that paid it, (if for his own account,) and the party Cr.

Secondly, Money paid, make the receiver Dr. (if for his own account,) and Cash Cr.

Thirdly, Goods bought for ready money, make the goods Dr. to Cash, and Cash Cr. by the Goods.

Fourthly, Goods sold for ready money, just the contrary, i. e. Cash Dr. and Goods Cr.

Fifthly, Goods bought at time; goods bought are Dr. to the seller of them, and the seller Cr. by the goods.

Sixthly, Goods sold for time, just the contrary, i. e. the party that bought them is Dr. to the goods, and the goods Cr. by the party.

Seventhly, Goods bought, part for ready money, and the rest for time: First, make the goods Dr. to the party for the whole secondly, make the party Dr. to cash for the money paid him in part of those goods.

Eighthly, Goods sold, part for ready money and the rest for time: First make the party Dr. to the goods for the whole; secondly, cash Dr. to the part received of him in parts of those goods.——Or either of these two last rules may be made Dr. to sundries; as goods bought Dr. to the selling man for so much as is left unpaid, and to cash for so much paid in ready money: and so on the contrary for goods sold.

Ninthly, When you pay money before it is due, and are to

have discount allowed you, make the person Dr. to cash for so much as you pay him, and to profit and loss for the discount; or make the receiving man Dr. to sundries, as before.

Profit and Loss is Dr.

To cash for what money you pay, and have nothing for it, as discount of money you receive before due, and for abatement by composition, household expences, &c.

Per Contra, Cr.

By cash for all you receive, and deliver nothing for it, as discount for prompt payment, any legacy left you, money received with an apprentice, and by the profit of every particular commodity you deal in, by ships in company, by voyages, &c.

To Balance or Clear an Account when full written.

First, if the debtor side be more than the credit, make the old account Cr. by the new; and if the contrary, make the new account Dr. to the old. But if the Dr. side be less than the Cr. then make the old account Dr. to the new, and the new account Cr. by the old, for such a rest or sum as you shall find in the account.

2. In account of company, wherein you have placed more received of another than his stock; then add as much on the debit side as you find on the credit side; to the end that in the new account, you may have so much debit as you put in, and so much credit as you have received.

3. In accounts of merchandise, you must enter the gain or loss, before you make the old account Cr. by the new, and the new Dr. to the old, for the remainder of goods unsold.

4. In the foreign accounts, which you are to keep with a double column for the dollars, crowns, or other foreign coins, as well as their value in *l. s. d.* which have been received or paid, by bills of exchange, for goods sold by factors or correspondents, or bought by them for the accounts before; here you must first balance the said inward column of dollars, crowns, &c.

To remove an Account full written to another Folio.

Sum or add up the Dr. and Cr. sides, and see the difference, which place to its opposite; as admit the Cr. side exceeds the Dr. then you are to write the line in the old account to balance on the Dr. side, to answer the line on the Cr. side of the new account.

How to balance at the Year's end, and thereby to know the State of your Affairs and Circumstances.

You must make an account of balance, on the next void leaf or folio of your Ledger, to your other accounts; but after so done, do not venture to draw out the account of balance in the said folio, till you have it exact on a sheet of paper, ruled and titled for that

purpose, because of mistakes or errors that may occur or happen in the course of balancing your Ledger, which are to be rectified, and will cause erasements or alterations in that account, which ought to be very fair and exact; and after you have made it to bear on the said sheet, copy fair the said account of balance in the Ledger.

The rules for balancing are these, viz.

First, Even your account of Cash, and bear the nett rest to balance Dr.

Secondly, Cast up all your goods bought, and those sold, of what kind soever, in each account of goods, and see whether all goods bought be sold or not; and if any remain unsold, value them as they cost you, or according to the present market price, ready-money; and bear the nett rest to balance Dr.

Thirdly, See what your goods or wares severally cost, and also how much they were sold for, and bear the nett gain or loss to the account of profit and loss.

Fourthly Even all the personal accounts with your Drs. and your Crs. in order as they lie, and bear the nett rest of them severally to balance.

Fifthly, Even your voyages, your factor's account wherein is either gain or loss, and bear the nett gain or loss to the account of profit and loss, and the goods unsold to balance.

Sixthly, Even the account of profit and loss, and bear the nett rest to stock or capital, as an advance to your stock and capital.

Seventhly, Even your stock, and bear the nett rest to balance Cr.

Then cast up the Dr. and Cr. sides of your balance; and if they come out both alike, then are your accounts well kept; otherwise you must find out your error by pricking over your books again, to see whether you have entered every Dr. and Cr. in the Ledger as you ought.

Note, By pricking over the book, is meant an examining of every article of the Journal against the Ledger, and marking it thus (*) or thus (†); and upon the second examination thus (‡); and upon a third examination thus (§) or any other mark.

Note also, In all accounts of goods you must keep a column in the middle of the leaf, of each side, for number, weight, and measure.

Though all that has been said in relation to Book-keeping and the several rules thereunto belonging, may seem a little abstruse to the altogether unlearned therein, yet there is no such mighty difficulty to instruct them as they may imagine; for those following hints may render what has been already said intelligible to an ordinary capacity.

First, Stick close to the text, or general rules before mentioned, viz. that all things received, or the receiver, are debtor to all things delivered, or the deliverer; for this rule holds good in all cases.

Secondly, When the Dr. (whether person or goods) is known the Cr. is easily understood without mentioning it; for if A be Dr. to B, then B is Cr. by A, for what sum soever it be: also, goods be Dr. to C, then C is Cr. by those goods for the sum they amount to. This I mention, because that most authors (if no all) that I have met with on the subject of book-keeping, spend a great many words, which I think (begging their pardon if I err) might be saved, in declaring the creditor, as well as shewing the debtor, when it may be understood as aforesaid.

Thirdly, This art of Italian Book-keeping, is called Book-keeping by double entry, because there must be two entries; the first being a charging of a person, money, or goods; and the second a discharging of a person, money, or goods.

Fourthly, Strictly note, that if the first entry be on the Dr. or left-hand side of your Ledger, the next or second entry must always be made on the right, or credit side, of your Ledger; for when one person or thing is charged, then always another person or thing is discharged for the said sum, let it be what it will.

And so it is in balancing or evening an account, and carrying into another folio; for if the old account be opened by the balance on the credit side, then the new account must be debited or charged on the debit side, for the sum that balanced the old account.

Much more might be said on the art of Book-keeping, if I had room; but I have plainly spoken to the principal fundamentals thereof, which I hope may be sufficient for the instruction and improvement of any intelligent reader.

The next subject I shall treat upon, is to shew or give examples of various kinds of Receipts, and Promissory Notes; also Bills of Parcels in different trades; likewise Bills of Book Debts, Bills of Exchange, with remarks on them; and some other precedents of writing in trade and mercantile affairs.

FORMS *of* RECEIPTS, NOTES, &c.

Necessary to be copied over often, as introductory to the forming the Man of Business.

Various Forms of Acquittances, when an Apprentice or Servant receives Money for the Use of the Employer.

Received the 13th of January, 1821, of Mr. John Barnett, forty-eight pounds nine shillings and sixpence, in full, for my master, Randall Norris,

SAMUEL SUMMERS.

£ 48 : 9 : 6

Received the 19th of January, 1821, of Mr. John Scott, nine pounds twelve shillings, for my master, John Knowles, on account,

SAUL ROSE.

£ 9 : 12 : 0

Received the 3d of February, 1821, of Mr. Joseph Page, twenty pounds fifteen shillings and nine-pence, for the use of my father, Joseph Bakewell,

THOMAS BAKEWELL.

£ 20 : 15 : 9

Received the 10th of February, 1821, of Mr. Henry Grandison, by order of Mr. George Gordon, the sum of two hundred pounds seven shillings and nine pence, on account of Mr. James Thomas, of Chelmsford; I say received for my master, John Goodman,

SAMUEL HUNT.

£ 200 : 7 : 9

Forms of Acquittances by Masters and Men of Business themselves, upon the Receipt of Money.

Received this 24th day of February, 1821, of Messrs. Jones and Bell, fifty-five pounds five shillings, on account,

£ 55 : 5 : 0 GEORGE BYWATER.

Received February 24th, 1821, of Mr. Jonathan Wright, sixty-nine pounds eighteen shillings, in full of all demands, for self and partner,

SAMUEL TILT.

£ 69 : 18 : 0

Received the 27th of February, 1821, by the order and for the use of Mr. John Jackson, of Mr. James Sedgwick, eight pounds ten shillings, together with the sum of ten pounds in full for one quarter's rent, due at Michaelmas last,

£ 18 : 10 : 0 GEORGE INNES.

Received the 16th of March, 1821, of John Brown, Esq. and the Owners of the ship Resource, the sum of eighty-five pounds, in full, for cordage, tackle, and trimming, furnished the said ship,

PETER JAMESON.

£ 85 : 0 : 0

PROMISSORY NOTES.

I promise to pay Mr. James Harrison, or bearer, on demand, six hundred pounds, seventeen shillings, and six pence, for value received. February, 23, 1821.

JOHN CUTLER.

£600 : 17 : 6

Four months after date, I promise to pay to Mr. Joseph Walker, or his order, the sum of forty-four pounds, for value received. January 26, 1821.

HEZEKIAH STANLEY.

£44 : 0 : 0

We promise to pay, five months after date, to Messrs. Grosvenor and Norris, or their order, sixty-eight pounds, fifteen shillings, for value received. March 1, 1821.

£68 : 15 : 0 ROWLAND and EDWARDS.

I promise to pay to Mr. Thomas Jones, or order, the sum of thirty pounds, in manner following: ten pounds in part thereof two months after date; ten pounds more the 17th of June next, and the remaining ten pounds the 24th of August, 1821; value received. Witness my hand at London, Feb. 27, 1821.

£30 : 0 : 0 DUNCAN M'INTOSH.

A promissory note mentioning order, is indorsable from one person to another, which is done by the present possessor's writing his name at the back of it, and delivering it up to the party to whom he intends to assign over his property therein.

It is unnecessary to have a promissory note payable to bearer indorsed, if you are satisfied the note is good.

The delivering up of a promissory note to the person who signed it, is a sufficient voucher of its being paid, nor is there any need of writing a receipt thereon.

Promissory notes and book debts, if not legally demanded in the space of six years, cannot be recovered by law, upon the debtor's pleading the statute.

If you keep a promissory note on demand in your own hands above three days, and the person it is upon should fail, the loss will be your own; but if he fail within three days, it will light in equity on the person who paid it you.

N. B. Observe in promissory notes, that the value received is mentioned, or they are of no force.

London, February, 25, 1821.

I promise to pay or furnish Sir George Bromley, on demand, with Bills of Exchange to the value of five thousand pounds

sterling, at the price current, payable to himself or order in Leghorn, the next ensuing fair, value of Sir James Kirby received.

per ABEL SMITH.

£5000 : 0 : 0

BILLS OF PARCELS.

Mr. James Sumpter, *Sheffield, Jan.* 5, 1821.

Bought of James Astbury,

		l.	*s.*	*d.*
6	Dozen of plated buckles, at 24*s.*	7	4	0
4	Dozen of common ditto, at 10*s.*	2	0	0
1	Card of eight points crystal links	0	14	0
1	Dozen of scissars	0	3	9
2	Dozen of blackwood bosom table knives, at 3*s.*	0	6	0
2	Dozen of camwood ferril'd ditto, at 6*s.*	0	12	0
		£10	19	9

At the same time received the contents in full,

per me, JAMES ASTBURY.

Mr. Samuel Newham, *Nottingham, Jan.* 19, 1821.

Bought of Isaac Wild,

		l.	*s.*	*d.*
2	Dozen of Men's 2-thread alted thread stockings	2	8	0
2	Dozen of ditto 3-thread fine marble ditto, at 42*s.*	4	4	0
9	Six-thread superfine breeches, at 10*s.* 6*d.*	4	14	6
6	Four-thread superfine ditto, at 7*s.* 6*d.*	2	5	0
6	Pair of silk ribbed stockings, stout, at 14*s.*	4	4	0
6	Pair of spun silk stockings, at 5*s.* 6*d.*	1	13	0
		£19	8	6

Received the above contents, in full of all demands, of Mr. Samuel Newham, for my master, Isaac Wild, per me,

JOHN DILLON.

Mrs. Elizabeth Sumpton, *Liverpool, Jan.* 22, 1821.

Bought of James Bentley,

		l.	*s.*	*d.*
16	Ells of dowlas, at 1*s.* 4*d.*	1	1	4
12	Ells of Holland, at 13*s.* 4*d.*	8	0	0
25	Yards of Irish, at 2*s.* 4*d.*	2	18	4
30	Yards of diaper, 1*s.* 9*d.*	2	12	6
10½	Yards of damask, at 4*s.* 6*d.*	2	7	3
1	Piece of muslin	2	17	5
		£19	16	10

Miss Polly Sumpton,

Coventry, Feb. 4 1821.
Bought of Mary Davidson,

		l.	*s.*	*d.*
15	Yards of flowered ribband, at 2*s.*	1	10	0
2	Pair of chicken gloves, at 7*s.* 6*d.*	0	15	0
3	Pair of fine lamb ditto, at 2*s.* 4*d.*	0	7	0
2	Fans, French mounts, at 3*s.* 6*d.*	0	7	0
6	Yards of Mechlin lace, at 12*s.*	3	12	0
1	Gauze cap and trimmings	1	2	0
		£7	13	0

Mr. Joseph Hall,

London, Feb. 6. 1821.
Bought of Joseph Jenkins,

		l.	*s.*	*d.*
1	Cheshire cheese, wt. 52lb. at 5*d.* per lb.	1	1	8
2	Gloucester ditto, wt. 22lb. at 4½*d.*	0	8	3
		£1	9	11

Received the contents, JOSEPH JENKINS.

OF BILLS OF EXCHANGE.

Bills of exchange are either inland or foreign. The inland bills are drawn by one trader, in one city or town, upon another of another city or town, in the same kingdom; as London upon Bristol, or Exeter upon London, &c. and these chiefly concern our shop-keepers, and wholesale traders, either of town or country; and the foreign more immediately concern the merchants.

Bills of exchange, if handsomely drawn, must be written in a fair hand, on a long piece of paper, about three inches broad, and written in form after the following precedents:

A BILL PAYABLE AT SIGHT.

London, Jan. 5, 1821.

At sight hereof pay to Mr. George Gregory or order, the sum of fifty pounds, value received of Charles Christopher; and place it to account, as per advice from

Your humble servant,
DAVID DAWSON.

To Mr. Peter Pownall,
Grocer, in High-street,
Bristol.

Note, A bill at sight is payable three days after the acceptor sees it.

Exon, Jan. 14, 1821.

Seven days after sight, pay to Mr. Nathan Nelson, or order, twenty-four pounds ten shillings, value received here of Mr. Timothy Strode, and place it to account, as per advice from

Your friend and servant,
MICHAEL MORGAN.

To Mr. Simon Cutler, Haberdasher, in Milk-street, London.

If Mr. Nelson sends his servant, Andrew Benson, to receive the money, after he has written his name on the back of the bill, (which is his order,) the servant must write a receipt to his master's name, thus:

Received Feb. 3, 1821, the full contents of the within-mentioned bill, being twenty-four pounds ten shillings.

NATHAN NELSON.

Witness,
Andrew Benson.

A FOREIGN BILL OF EXCHANGE.

London, Jan. 6, 1821.

For 460 crowns, at $56\frac{3}{8}d.$ sterling per crown.

At Usance pay this my first bill of exchange (my second or third not being paid) unto Mr. Henry Vernon, or order, four hundred and sixty crowns, at $56\frac{3}{8}d.$ per crown, value received of Mr. Samuel Thompson, and pass it to account, as per advice from,

Sir,

Your humble servant,
EBENEZER REYNOLDS.

To Mr. Wm. Walker, Merchant, in Paris.

(ANOTHER.)

London, Jan. 17, 1821.

For 480 dollars, at $55\frac{1}{8}d.$ per dollar.

At three Usance pay this my first bill of exchange unto Mr. William Williams, or order, four hundred and eighty dollars, at $55\frac{1}{8}$ pence sterling per dollar, value received of himself, and place it to account, as per advice from

Your humble servant,
MARK FOSBROOK.

To Messrs. Daniel and David Barnardiston, merchants in Aleppo.

Note, Usance between England, France, or Holland, is one calendar month; between England and Spain or Portugal, two months; between England and Italy, three months, &c.

(ONCE MORE.)

Bristol, Jan. 8. 1821.

For 600 pieces of eight, at 58$\frac{3}{8}$*d.* per piece.

At double Usance pay this my first bill of exchange unto Mr. Lawrence de Luz, or his order, six hundred pieces of eight Mexico, at 58$\frac{3}{8}$*d.* sterling per piece of eight, value received of Gomez Henriques, and pass it to account, as per advice from your's,

To Mr. Simon Shorton, merchant, in Leghorn. } WILLIAM HENRY HERN.

NOTES ON BILLS OF EXCHANGE.

1. The accepter of any bill is become absolute debtor to the person to whom the bill is payable for the contents thereof.

2. The person to whom the bill is payable must demand the money the very day it becomes due, and if the accepter dies before it becomes due, it must be demanded of the executor or administrator.

3. The drawer of any bill must always give his correspondent a letter of advice, that he has drawn such a bill on him for such a sum, &c.

4. None may pay a bill without such letter of advice.

5. In England a bill is due the third day after the expiration of the time mentioned in the bill.

OF ENDORSING.

It frequently happens, that between the acceptance of a bill and the time of payment, the party to whom it is first made payable has occasion to pay it away: if so, he writes his name on the back of the bill, which is his order, (as said before,) and gives it to the person he is indebted to, and then he is empowered to receive the money: and it may be the second person also wants to pay it away, and then he likewise writes his name under the other, and delivers it to a third person to receive the money; and it may be the third does the same, and delivers it to a fourth person, &c. All that do so are endorsers: and he that last has the bill, if the accepter will not pay it, may sue him, or the endorsers, or drawer, or any of them, for the money.

An endorsement is generally in these words, viz.—Pay the contents of the within mentioned bill to Henry Hadwen.

GEORGE GERARD.

But generally the name only is reckoned sufficient.

OF PROTESTING.

When a bill is to be protested, the party that has the bill must go to the public notary, (not to a common scrivener,) whose business it is; and he goes with you to the accepter's house, and

demand payments, &c. And then he draws up a protest according to law; which is to be returned to the drawer within the time limited, &c.

It is needless to give here the form of a protest, because no man can do it of himself.

The CHARGE *of* NOTING *and* PROTESTING *a* BILL.

		s.	*d.*			*s.*	*d.*
Noting	within the city	1	6	Protesting	within	3	0
	without the city	2	6		without	5	0

A BILL OF DEBT.

Know all men by these presents, that I Lawrence Dawson, of Southwark, vintner, do owe and am indebted unto Charles Coatman, of the same place, salter, the sum of one hundred and fifty pounds of lawful money of Great Britain; which said sum I promise to pay unto the said Charles Coatman, his executors, administrators, or assigns, on or before the 24th of December next ensuing the date hereof. Witness my hand and seal this 6th day of July, 1821.

Sealed and delivered in the presence of, &c. LAWRENCE DAWSON.

A BILL FOR MONEY BORROWED.

Received and borrowed of James Smith of London, merchant, fifty pounds, which I do hereby promise to pay on demand. Witness my hand this 6th day of July, 1821.

£50 PETER JONES

USEFUL PRECEDENTS IN LAW.

A WILL.

In the name of God, Amen.—The sixth day of June, one thousand eight hundred and twenty-one.

I George Thomson, of the city of London, grocer, being very sick and weak of body, but of perfect mind and memory, thanks be given unto God; therefore calling unto mind the mortality of my body, knowing that it is appointed once unto all men to die, do make and ordain this my last Will and Testament; that is to say, principally and first of all, I give and recommend my soul into the hands of Almighty God that gave it, and my body I recommend to the earth, to be buried in decent Christian burial, at the discretion of my executors; nothing doubting but, at the general resurrection, I shall receive the same again by the

almighty power of God. And as touching such worldly estate wherewith it has pleased God to bless me in this life, I give, demise, and dispose of the same, in the following manner and form:

First, I give and bequeath to Elizabeth my dearly beloved wife, the sum of eight hundred pounds of lawful money of England, to be raised and levied out of my estate, together with all my household goods, debts, and moveable effects.

Also, I give to my well-beloved daughter Sophia Thomson, the sum of two thousand pounds of lawful money of England, to be raised and levied out of my estates, and paid to her by my executors hereafter named on the day of her marriage, or when she becomes twenty-one years old. And also that my executors shall pay her fifty pounds, lawful money of England, on the first day of every year, until she claims the above two thousand pounds, according to the intent and meaning of this will.

Also, I give and bequeath to my well-beloved son John Thomson, whom I likewise constitute, make, or ordain, my sole executor of this my last Will and Testament, all and singular my lands, messuages, and tenements, by him freely to be possessed and enjoyed. And I do hereby utterly disallow, revoke, and disannul, all and every other former testaments, wills, legacies, bequests, and executors, by me in any ways before named, willed, and bequeathed; ratifying and confirming this, and no other, to be my last Will and Testament. In witness whereof I have hereunto set my hand and seal this day and year above-written.

GEORGE THOMSON.

Signed, sealed, published, pronounced, and declared, by the said George Thomson, as his last Will and Testament, in the presence of us the subscribers, WILLIAM BAKER,
JOHN SMITH,
GEORGE ADAMS.

The testator, after taking off the seal, must, in the presence of the witnesses, pronounce these words, *I publish and declare this to be my last Will and Testament.*

Note, If a will be already made, and the person has no mind to alter it, but to add something more, there may be affixed the following codicil or schedule to it, and it will stand good in law as part of the Will.

A Codicil to a Will.

Be it known unto all men by these Presents, That I George Thomson, of the City of London, Grocer, have made and declared my last Will and Testament in Writing, bearing date the 6th day of June, One Thousand Eight Hundred and Twenty-one; I the said George Thomson, by this present Codicil, do ratify and confirm my said last Will and Testament; and do further give and bequeath unto my loving cousin, George Thomson,

junior, the sum of fifty pounds of good and lawful money of England, to be paid to him the said George Thomson, by my executor, out of my estate; and my will and meaning is, that this codicil be adjudged to be a part and parcel of my last Will and Testament; and that all things therein mentioned and contained be faithfully and truly performed, and as fully and amply in every respect, as if the same were declared and set down in my said last Will and Testament. Witness my hand this twentieth day of April, one thousand eight hundred and twenty-one.

Signed in the presence of us,

JAMES BLUFF. GEORGE THOMSON.
HENRY GREY.

A DEED OR GIFT OF GOODS.

To all people unto whom this present writing shall come, I, A. B. of ———, send greeting: Know ye that I the said A. B. for divers good causes, and valuable considerations me hereunto moving, have given, granted, and by these presents do give, grant, and confirm unto C. D. of ———, all and singular my goods, chattels, household stuff, and all other my substance whatsoever, in whose hands, custody, possession, or keeping soever, the same are or can or may be found, to have and to hold all and singular the said goods, chattels, and household stuff whatsoever, of me the said A. B. unto the said C. D. his executors, administrators, and assigns, from henceforth to his and their own proper use and uses thereof, and therewith to do, order, and dispose, at his or their wills and pleasure, as of their own proper goods and chattels, freely, peaceably, and quietly, without any manner of lett, trouble, or denial, of me the said A. B. or any other person or persons whatsoever: of all which premises I the said A. B. have put the said C. D. in full and peaceable possession by virtue hereof. In witness whereof, I the said A. B. have hereunto set my hand and seal the 6th day of March, 1821.

Sealed and delivered (being first legally stamped) in the presence of ———

Observe, *Objection.* The deed is not good, some say, if the giver uses the goods. *Ans.* But may not the goods be lent him by the receiver?

A GENERAL RELEASE.

Know all men by these presents, that Henry Hart, of London, founder, have remised, released, and for ever quitted claim, and by these presents do for me, my heirs, executors, and administrators, remise, release, and for ever quit claim, unto David Jones, citizen and loriner of London, his heirs, executors, and administrators, all and all manner of actions, cause and causes of actions, suits, bills, bonds, writings obligatory, debts, dues, duties, ac-

counts, sum and sums of money, judgments, executions, extents, quarrels, controversies, trespasses, damages, and demands whatsoever, both in law and equity, or otherwise howsoever, which against the said David Jones I ever had, now have, and which I, my heirs, executors, administrators, shall or may have claim, challenge, or demand, for or by reason or means of any matter, cause, or thing, from the beginning of the world to the day of the date of these presents. In witness whereof I have hereunto set my hand and seal, the 10th day of March, and in the year of our Lord 1821.

Signed, sealed, and delivered,
(being first legally stamped) HENRY HART, (L. S.)
in the presence of ——— ———

FORM OF AN INDENTURE FOR AN APPRENTICE.

This Indenture witnesses, that T. G. son of P. G. &c. doth put himself apprentice to G. H. tallow-chandler, to learn his art or mystery, and with him, after the manner of an apprentice, to serve from the day of the date hereof, for and during the term of seven years next ensuing; during all which time, he the said apprentice his said master faithfully shall serve, his secrets keep, and all his lawful commands every where gladly do: he shall do no damage to his said master, nor see it to be done by others without letting or giving notice thereof to his said master: he shall not waste his said master's goods, nor lend them unlawfully to any. He shall not commit fornication, nor contract matrimony during the said term: he shall not play at cards, dice, or any other unlawful game, whereby his said master may be damaged, with his own goods nor the goods of others: he shall not absent himself day nor night from his said master's service unlawfully; nor haunt ale-houses, taverns, or play-houses; but in all things behave himself as a faithful apprentice, in the trade or mystery he now follows. And the said master shall procure and provide for him sufficient meat, drink, apparel, lodging, washing, and other necessaries, during the said term. And for the true performance of all and every the said covenants and agreements, each of the said parties binds himself unto the other firmly by these presents. In witness whereof, they have interchangeably set their hands and seals hereunto, this twelfth day of March, in the second year of the reign of our sovereign lord George the Fourth, king of the united kingdom of Great Britain and Ireland, and in the year of our Lord 1821.

A BOND.

Know all men by these presents, that I Benjamin Ball, in the county of Middlesex, merchant, am held and firmly bound unto William Ward, of Sutton Colefield, in the county of Warwick, Esq. in the sum of one hundred pounds of good and lawful money

of Great Britain, to be paid to the said William Ward, his heirs, executors, administrators, or assigns, firmly by these presents, sealed with my seal. Dated the first day of April, in the second year of the reign of our sovereign lord George the Fourth, by the grace of God king of the United Kingdom of Great Britain and Ireland, defender of the faith, &c. and in the year of our Lord God one thousand eight hundred and twenty-one.

A LETTER OF ATTORNEY.

Know all men by these presents, that I Christopher Coatman, of Lewes, in the county of Sussex, apothecary, for divers considerations and good causes me hereunto moving, have made, ordained, constituted, and appointed, and by these presents do make, ordain, constitute, and appoint, my trusty friend William Wagstaff, of Pemsey, in the county aforesaid, gentleman, my true and lawful attorney for me, in my name, and to my use, to ask, demand, recover, or receive, of or from A. B. of Rye, in the said county, the sum of forty pounds: giving, and by these presents granting to my said attorney, sole and full power and authority to take, pursue, and follow, such legal courses for the recovery, receiving, and obtaining the same, and upon the receipt of the same acquittances, and other sufficient discharges, for me, and in my name, to make, sign, seal, and deliver; as also, one or more attorney or attorneys under him to substitute or appoint, and again at his pleasure to revoke; and further to do, perform, and execute for me, and in my name, every and singular thing or all things, which are or may be necessary touching and concerning the premises, as fully, thoroughly, and entirely, as I the said Christopher Coatman in my own person ought or could do in and about the same; ratifying, allowing, and confirming, whatsoever my said attorney shall lawfully do, or cause to be done, in and about the execution of the premises, by virtue of these presents. In witness whereof I have hereunto set my hand and seal, the sixth day of January, in the first year of the reign of our sovereign lord George the Fourth, by the grace of God king of the United Kingdom of Great Britain, &c. and in the year of our Lord one thousand eight hundred and twenty-one.

MENSURATION.

Of PLANES *and* SOLIDS.

THE several kinds of measuring are three, viz.

1st, *Lineal*, by some called *running measure*, and is taken by a line, and respects length without breadth; the parts of which are, 12 inches 1 foot, 3 feet 1 yard, 16 feet and a half 1 rod, pole, or perch.

All kinds of ornamental work, such as cornice, frieze, &c. are measured by running measure.

2dly. *Superficial*, or square measure, is that which respects length and breadth; and the parts are, 144 inches 1 foot, 72 inches half a foot, 36 inches one quarter of a foot, 18 inches half a quarter of a foot, 272 feet and a quarter 1 rod, 136 feet half a rod, 1196 inches, or 9 feet, one superficial or square yard.

3dly. *Solid*, or cube measure, which respects length, breadth, and depth, or thickness; and the parts are, 1728 inches 1 foot, 1296 inches three quarters of a foot, 864 inches half a foot, 432 inches one quarter of a foot, and 27 feet one solid yard.

Superficial Measure.

To measure things that have length and breadth, such as board, glass, pavement, wainscot, and land, is to take the dimensions of the length and breadth, according to the customary methods used in each particular; for instance, board and glass are measured by the foot, the dimensions are taken in feet and inches, and the content given in feet.

The dimensions of wainscoting and paving, plastering and painting, are taken in feet and inches, and the content given in yards.

Of the square or superficial Content or Area.

The squaring of any number is multiplying it into itself, as 12 inches multiplied by 12 inches, make 144 square inches. The superficial content or area of any thing is found four several ways, viz. by whole numbers, by Decimals, by Practice, and by Cross-multiplication; in each of which methods I shall give examples of operation.

A square has its sides perpendicular, and those that are opposite equal; but the adjacent sides are unequal: boards, wainscots, ceilings, windows, doors, &c. are commonly of this figure.

When any thing is to be measured, it must be considered what form or fashion it is of; and then it must be measured according to the several rules for each figure.

First, If it be a square or oblong, then the length and breadth must be multiplied one by the other, which gives the content in square measure, and that product must be divided by its proper divisor, according to the name in which the content or area is to be given.

Example.

Admit a board to be 12 inches broad, and 8 feet or 96 inches long, how many square or superficial feet does it contain?

B. 12 | L. 96.

96
12

144) 1152 (8 feet.
1152

Here the length in inches is multiplied by the breadth in inches long, and the product, 1152 divided by 144, the square inches in a foot, quotes 8 feet square for the content of the board.

A Rule for Despatch.

If the length of a board, or piece of glass, be given in feet, and the breadth in inches, multiply the one by the other, (without any reduction,) and divide the product by 12; and the quotient will be the answer in feet, and the remainder will be parts of a foot. So the foregoing example might have been done sooner by dividing 96 the length, by 12 the breadth, and it quotes 8 feet for the content, as by the former way.

Example.

Suppose a board be 14 feet long, and 15 inches broad, what is the content in square feet?

14 feet long.
15 inches broad.

12) 210

Feet $17\frac{6}{12}$ or $\frac{1}{2}$

So the answer is 17 feet and $\frac{1}{2}$. And so for any other example of this kind.

Or more concisely thus:

14
by 1—3

14

3 in. $\frac{1}{4}$ $3\frac{2}{4}$ or $\frac{1}{2}$

Answer, $17\frac{1}{2}$

Here 3 inches is $\frac{1}{4}$ of a foot; wherefore $\frac{1}{4}$ of 14 is taken and added to 14, and it makes 17 feet and $\frac{2}{4}$, equal to $\frac{1}{2}$.

Another Example worked four different ways.

If a board be $12\frac{1}{2}$ feet, or 150 inches long, and 15 inches broad, how many square feet does it contain?

Vulgarly.

inches.
150 long.
15 broad.

750
150

2350 Inches.

Decimally.

12,5
1,25

625
250
125

Feet 15,625

144) 2250 (15 feet.
144.

810
720

Rem. 90

Multiply by 12 inch. 1 foot.

144) 1080 (7 inches
1008

Rem. 72

Multiply by 4 the quarters of an inch.

144) 288 (2 quarters, or $\frac{1}{2}$
288

...

Feet 15,625
12

Inches 7,500
4

Quarter 2,000

By Cross-Multiplication.

feet.	*inch.*
12	6
1	3
12	0
0	6
3	0
0	$1\frac{1}{2}$
Answer, 15	$7\frac{1}{2}$

By Practice.

	feet.	*inch.*
	12	6
	1	3
	12	6
3 Inches $\frac{1}{4}$	3	$1\frac{1}{2}$
	15	$7\frac{1}{2}$

The four methods here used are as follows: First by multiplying the inches together, and dividing by 144, &c. The second work is performed Decimally; the third method is by Cross-Multiplication; and the last and the best is by Practice.

Any of these methods may be easily understood by the use of the arithmetical part of this book, except the method by Cross-Multiplication, which I shall explain here.

In the example, 1 foot 3 stands under 12 feet 6; and having drawn a line, say 12 is 12, and then say crossway, 6 times 1 is 6 inches; so that line is 0 feet 6 inches; then crossway, again I say, 3 times 12 is 36 inches, the 12's in 36 is three times, or 3 feet; so that line is 3 feet 0 inches. Lastly, I multiply the inches together, saying 3 times 6 is 18, the 12's in 18 once, and there remains 6, or $\frac{6}{12}$, equal to $\frac{1}{2}$, as in the work.

If a board be wider at one end than the other, then take the breadth in the middle, or add the measure of both ends together,

and take the half of the mean breadth, which multiply by the length.

Example.

Suppose a board to be 120 inches long, and the narrow end 10 inches wide, the broadest end 34 inches wide; what is its content in superficial feet?

Add {	34	broadest end.
	10	narrowest.
Sum	44	
Its half is	22	the medium.
	120	the length.

144) 2640 (18 feet $\frac{1}{3}$ answer.
144.

1200
1152

Rem. 48 or 4 inches.

Or thus:

		feet.	*inches.*	
		10	0	the length.
		1	10	the mean breadth.
		10	0	
For 10 Inch.	6 In. $\frac{1}{2}$	5	0	
	4 — $\frac{1}{3}$	3	4	
		18	4	Answer.

If a board or piece of glass be ever so irregular, it may be measured very near, by taking the breadth in 5 or six places, and add the several breadths together, dividing the total by the number of places, and the quotient will be the mean breadth; which multiply by the length, &c.

Having the breadth in inches of any board, or piece of glass, to know how much the length of a board or piece of glass will make of a foot superficial?

Rule. Divide 144 by the inches in breadth, and the quotient will be the length of that board that will make a foot.

Example.

If a board be 9 inches broad, what length of that board will make a superficial foot?

9) 144

Answer, 16

Proper DIMENSIONS *for* JOINERS, PAINTERS, GLAZIERS, *&c.*

Rooms being various in their forms, take this general rule in all cases, viz. Take a line, and apply one end of it to any corner of the room; then measure the room, going into every corner with the line, till you come to the place where you first began; then see how many feet and inches the string contains, and set it down for the compass or round; then take the height by the same method.

Glaziers are to take the depth and breadth of their work, and multiply one by the other, dividing by 144. Glass is measured as board.

Having thus shewn the method of casting the dimensions, I come now to particulars, viz.

GLAZIERS' WORK BY THE FOOT.

If the windows be square, multiply the length by the breadth, which will produce the content.

Example.

By Cross-Multiplication.

feet. inch.	
8 : 9	high.
7 : 3	broad.
56 : 0	
2 : 0	
5 : 3	
$2\frac{1}{4}$	
63 : $5\frac{1}{4}$	

By Practice.

feet. inch.		
8 : 9		
7 feet 3		
61 : 3		
3 inches $\frac{1}{4}$	2 : $2\frac{1}{4}$	
63 : $5\frac{1}{4}$		

If the windows are arched, or have a curved form, no allowance is made, by reason of the extraordinary trouble and waste of time, expence, or waste of glass, &c. And the dimensions taken from the highest part of the arch, down to the bottom of the window, from the height or length; which multiply by the breadth, and the product will be the answer in feet, &c.

Glaziers are often so very nice, as to take their dimensions, and to measure to a quarter of an inch.

Example.

feet. inch.

4 : $3\frac{1}{2}$ long.
2 : $7\frac{3}{4}$ broad.

---

8 : 7
6 inches is $\frac{1}{2}$ - 2 : $1\frac{3}{4}$
1 $\frac{1}{2}$ is $\frac{1}{4}$ - 0 : $6\frac{3}{4}$
$\frac{1}{4}$ is $\frac{1}{6}$ - 0 : $1\frac{1}{4}$

---

11 : 4--

Painters' Work by the Yard.

When the wainscot of a room is painted, you are to measure round the room with a line, as hinted before, and the height is to be taken by girting a string over all the mouldings from the top of the cornice to the floor: then multiply the compass by the height, and you have the content in feet and inches; which may be reduced into square yards by dividing by 9.

Example 1.

A room painted.
feet. inch.
Being 45—8 in compass, what is the content in square yards?
10—6 high.

456—8
22 10

---

9) 479—6

Yards 53—2—6 Answer.

Example 2. If the height of a room painted be 12 feet 4, and the compass 84 feet 11; what square yards does it contain?

Answer, 116 yards 3 feet 3 inches $\frac{2}{3}$.

feet. inch.
84—11 compass.
12— 4 high.

1019— 0
4 in. $\frac{1}{3}$ 28— $3\frac{2}{3}$

---

9) 1047— $3\frac{2}{3}$

Yards 116— 3—$3\frac{2}{3}$

Note. Double work is allowed in window shutters; sash frames and mantle-pieces are reckoned by themselves, unless the mantle-pieces stand in the wainscot, and then they are to be measured as plain work, deducting nothing for the vacancy.

Joiners' Work.

In wainscoting, the dimensions are taken as in painting, viz. by measuring the height, (indenting the string where the plane goes, as well as the painters do wherever the brush goes,) and the compass; which multiply one into the other, dividing the product by 9; and the quotient is the answer in square yards.

Example. What is the content of a piece of wainscoting that is 9 feet 3 inches long, and 6 feet 6 inches broad?

feet. inch.

9 3

6 ft. 6 inch.

55 6

6 inch. $\frac{1}{2}$ 4 $7\frac{1}{2}$

9) 60 $1\frac{1}{2}$ (

6 yards $\frac{2}{3}$ Answer.

The length and breadth being multiplied together, brings it into square feet; which divided by 9, (the square feet in a yard) produces 6 yards $\frac{2}{3}$, for the answer.

Once more.

There is a room wainscoted, the compass of which is 47 feet 3 inches, and the height 7 feet 6 inches: what is the content in square yards? Answer 39 $\frac{2}{3}$ yards.

feet. inch.

47 3 compass.

7 6 the height.

330 9

6 inch. $\frac{1}{2}$ 23 $7\frac{1}{2}$

9) 354 $4\frac{1}{2}$

Answer, 39 yds. $\frac{3}{9}$ or $\frac{1}{3}$.

Carpenter's Work.

Roofing, flooring, and partitioning, by the principal carpenters, in modern buildings, are measured by the square of 10 feet each way, that is, 100 square feet.

For roofing, multiply the depth and half depth by the front, or the front and half front by the depth, and you will have the content.

The dimensions are taken in feet and inches.

Example.

How many squares does that piece of work contain that measures 199 feet 10 inches in length, and 10 feet 7 inches in height? Answer 21 squares 14 feet $10\frac{5}{6}$ inches.

Operation.

	feet.	*inch.*	
	199	10 long.	The division is performed by pointing off two places towards the right hand, and the number on the left are the squares, &c.
		10 f. 7 in. high.	
	1998	4	
6 inches $\frac{1}{2}$	99	11	
1 inch $\frac{1}{6}$	16	$7\frac{5}{6}$	
	21,14	$10\frac{5}{6}$	Ans. 21 squares, 14 feet, $10\frac{5}{6}$ inches.

Again.

If a floor be 49 feet 7 inches 4 parts long, and 26 feet 6 inches broad, how many square feet?

feet.	*inches.*	*parts.*	
49	7	4	
			$5\times5+1+\frac{1}{2}=26\frac{1}{2}$
248	0	8	
		5	
1240	3	4	
49	7	4	
24	9	8	
13,14	8	4	

Answer, 13 squares, 14 feet, 8 inches, 4 parts.

Note. In measuring roofing, no deduction is made for sky-lights, chimney-shafts, &c.

In measuring flooring, from the content of the whole floor in feet take the content of the vacancy for the stairs, hearth, &c. in feet, and the remainder is the true content; which bring into squares as before.

Note. In partitioning you must measure the doors, door-cases, and windows, by themselves, and deduct their content out of the whole, except by agreement they are included: and then you must mention in the written agreement,—doors, door-cases, and windows, included.

There are divers sorts of carpenters' work belonging to a building, viz. Cantavilier cornice, Modillion cornice, plain cornice, guttering, rail and balusters, lintel, penthouse-cornice, timber-front, story, breast sommers, shelving, dressering, &c. all which are measured by lineal or running measure. There are also doors and door-cases, lanthorn lights with their ornaments, balcony-doors, and cases, cellar-doors and curbs, columns and pilasters, cupolas, &c. all which are valued by the piece.

Sawyers' Work.

In this place it may not be improper to say something in relation to the method used by sawyers in measuring their work.—When they work by the great, as they say, most commonly they measure their work by the superficial foot; so there is no great difficulty in taking the dimensions: for they account the depth of the kerfs for the breadth, and the length for the length. The dimensions being thus taken in feet, the content of one kerf superficial may be found by multiplying the length by the breadth, and then having found the number of feet in one kerf, multiply it by the number of kerfs of the same dimensions, and you will have the number of feet in them all.

Note, 1. When thus they have cast up the whole content of their work in feet, they are paid for it by the hundred, that is, 100 feet.

2. That if the kerf be but six inches or less in depth, then they have a custom to be paid for kerf and half, as they express it, *i. e.* for half as much more as it comes to by measure; and the reason they give for it is, that the trouble is so much the more on account of often shifting or removing, and new-binding their timber, and therefore they insist on it as a customary price.

3. For breaking-work, that is, for cutting a piece of timber or tree through the middle, and slabbing it, *i. e.* cutting off the outside pieces, if the kerf be more than 12 or 13 inches deep, they are paid by the foot lineal, or running measure, at different prices, according to the various depths of the kerf; and are as follows:

Inches.	*d. qrs.*
15	1
18	1 2
20	2
22	2 2
24	3
26	3 2
28	4
30	4 2
32	5
34	5 2
36	6

4. In some places it is customary to allow the sawyer but one breaking kerf in a tree, though there be ever so many kerfs deep in it. But some sawyers claim to have half breaking-work, and half hundred-work; that is, if they have four kerfs deep, then they will have two breaking-work, and the other two hundred-work.

5. In sawing bevil work, as hipps, sleepers, &c. posts, &c. in bevil frames, posts or puncheons in polygonal turrets, &c. also

cantrails, &c. for these they work by the hundred, but always reckon kerf and half for such sort of work; that is, they reckon half as many more feet of work than there is really performed.

Bricklayers' and Tylers' Work.

Of Walling.

Walling is measured by the rod statute-measure, being 272 feet and $\frac{1}{4}$ superficial. The method of taking their dimensions is thus: For a wall round an orchard, or the like, they measure the length by a line going over the buttresses; and for the height, they measure over the mouldings (pressing the line into them) even to the middle of the coping: they likewise take notice of the thickness of the wall, that is, how many half-bricks in length the wall is in thickness; for three half-bricks, that is, a brick in length and one in breadth, is standard thickness: and all walls, whether less or more, must be reduced to that thickness, by this rule, viz. Multiply the product of the length and height by the number of half-bricks that the wall is in thickness; which product divide by 3, and then the quotient by 272 (the $\frac{1}{4}$ being generally neglected in vulgar working) and the quotient will be rods, at a brick and a half thick, standard measure.

Example.

Admit the face of a wall to measure 4085 feet, and the thickness to be two bricks and a half, or five half-bricks, thick, how many rods does it contain?

```
 4085
    5
-------
3) 20425
-------
272) 6808, (25 rods, Answer.
     544
-------
     1368
     1360
-------
        (8)
```

When the work is wrought decimally, then you divide by $272\frac{1}{4}$, or 272,25, which gives the quotient somewhat less. But the measuring of brick-work may be shortened by having the rod of $16\frac{1}{2}$ feet centesimally divided into 100 equal parts, with which you take the dimensions; and the length of the wall in these rods and 100 parts, multiplied by the height, give the contents in rods of any wall that is a brick and a half thick. Deduction must be made for doors, windows, &c.

A table to reduce brick-work to a standard measure, *i. e.* a brick and a half thick.

Brick			
1	Subtract	$\frac{2}{3}$	Reduces to a brick and a half.
2	Add	$\frac{1}{3}$	
3	Multiply by	2	
$4\frac{1}{2}$		3	
6		4	

Example.

Suppose a garden wall to be 254 feet round, and 12 feet 7 inches high, and three bricks thick; how many rods does it contain?

	254	In this operation, the aggregate, or total, is multiplied by 2, because twice 3 is 6, the number of half bricks; and that reduces the work to standard measure, as by the above table.
	12	
	3048	
6 Inch. $\frac{1}{2}$	127	
1 — $\frac{1}{6}$	21 2	
	3196 2	
	2	
	272) 6392—4 ($23\frac{1}{2}$	

Of Chimnies.

This brick-work is commonly agreed for by the hearth, and also sometimes by the rod; and the method of taking dimensions is thus: If the chimney stands singly, not leaning against or being in a wall, and worked upright over the mantle tree to the next floor, it is girt about the breast for the length, and the height of the story is taken for the breadth, and the thickness of the jaumbs for the thickness. But if the chimney stands against or in a wall, which is before measured with the rest of the building, then the breadth of the breast or front, together with the depth of the two jaumbs, is the length; the height of the story, the breadth; and the thickness of the jaumbs, the thickness. But if the chimney stand in the corner of a room, and have no jaumbs, then the breadth of the breast is the breadth, the height of the story the length, and the thickness the thickness. And for the shaft it is commonly girt in the smallest part for the length, and the thickness of both sides for the thickness; in consideration of the widths, pargeting, scaffolding, &c.

Note. There is nothing to be deducted for the vacancy between the hearth and the mantle-tree, because of the width and the thickening for the next hearth above.

Gable Ends.

Take half the perpendicular for the breadth, and the width of the house for the length, or half of the width of the house for the breadth, and the perpendicular for the length, which brings the measure to an oblong, the contents of which is found by multiplying the length by the breadth, &c.

Note. There are several other things in bricklayers' work, as cornice, facets, straight arches, chime arches, hipps, and vallies, in tiling and water courses; all which are measured by the foot lineal, or running measure. Also piers, pilasters, rustic work, &c. which are valued by the piece.

Paving.

Pavement for cellars, wash-houses, &c. is measured by the square yard.

Example.

If a cellar, wash-house, or court-yard, be paved with bricks, or pitched with pebble, being 9 yards 2 feet long, and 6 yards 2 feet broad, how many yards square doth it contain? Answer, 64 yards $1\frac{1}{3}$ feet, as by the following work:

yds.	*f.*	
9	2	
6	2	
54	0	
6	0	
4	0	
	$1\frac{1}{3}$	
64	$1\frac{1}{3}$	Answer.

yds.	*f.*		
9	2		
	6 yards 2 feet		
58	0		
3	0	8	
3	0	8	
64	1	$\frac{1}{3}$	Answer.

feet.	
29	
20	
9) 580	

Here the answer is found by three different operations, and the result of each is the same.

Yards $64\frac{4}{9}$ or $1\frac{1}{3}$ Answer.

Slating

Is valued by the square of 100 feet; in some places by the rod of 18 feet square; that is, 36 square yards, or 324 feet.

N.B. In tiling and slating, where there are gutters and valleys, there is commonly an allowance, which is, to take the length of the roof all along upon the ridge, which makes the gutter double measure; which in some places is allowed, in others not. Some-

times there is an addition for hollow ware, that is, ridge tiles, gutter tiles, corner and dormer tiles; and here customs differ: for in some places they account one superficial foot every lineal foot, or running measure: then 100 feet lineal is reckoned a square. In other places, for every 100 of such tiles they reckon one square.

Plastering

Is of two kinds, viz. *First*, Work lathed and plastered, sometimes called ceiling. *Secondly*, Plastering upon brick work, or between the quarters in partitioning, by some called rendering; both which are measured by the yard square, as the joiners and painters do. In taking the dimensions of a ceiling, if the room be wainscoted, they consider how far the cornice bears into the room, by putting up a stick perpendicular to the ceiling, close to the edge of the uppermost part of the cornice, and measure the distance from the perpendicular stick to the wainscot; twice which distance must be deducted from the length and breadth of the room taken upon the floor, and the remainder is the true length and breadth of the ceiling: As suppose a floor is 24 feet long, and 18 feet broad, and the cornice shoots out 6 inches, deduct a foot for both ends, and the length of the ceiling is 23 feet, and the same for the breadth; it leaves 17 feet broad; which multiplied together, gives the content, 391 feet; or 43 yards and a half.

Example.

23 feet the length.
17 feet broad.

161
23

9) 391 (43 yards 4 feet, Answer.
36

31
27

4 feet.

How many square yards are there in a piece of plastering that is 47 feet 4 inches 7 parts long, and 18 feet broad?

feet.	*in.*	*pts.*	
47	4	7	
			3 times 6 is 18.
142	1	9	
		6	
9) 852	10	6	(94 yards 6 feet 10 inches 6 parts.

Masons' Work.

The masons' work, consisting of stone, is of two sorts, viz. Superficial and Solid. Pavements, and the face of stone walls, houses, &c. are measured as brick-work. If the work have ornaments, as capitals, pilasters, rails, balusters, &c. then they are valued by the piece.

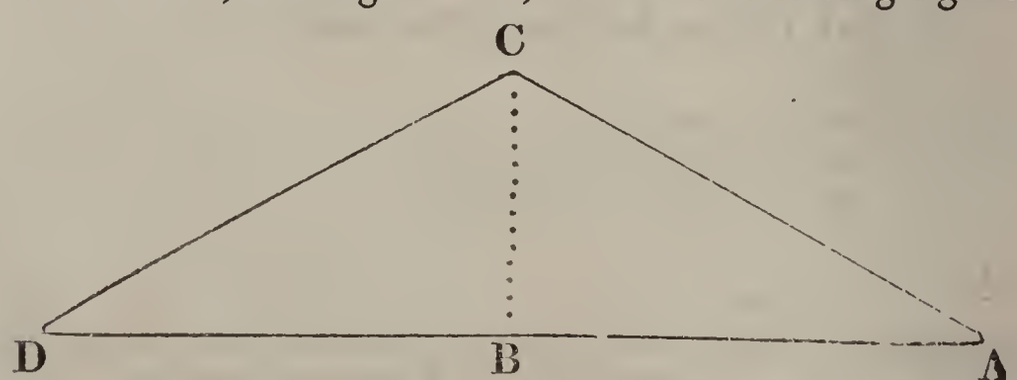
Land Measure.

Land is usually measured by the acre. The dimensions are taken with a chain of four poles in length, which is divided into 100 parts, called links; and ten square chains make an acre.—Let them be 10 in length, and 1 in breadth, or 5 in length, and 2 in breadth, &c. 160 square poles; but to find its content (if not regularly square) it is generally divided into triangles: thus a piece of land of 4 sides (if not square) may be divided into two triangles; pieces of 5 sides into 3, and a 6-sided piece into 4 triangles.

To measure a Triangle.

Admit the longest side of the following triangle, viz. A D, to be 76 poles; and the perpendicular or dotted line B C, to be 30 poles; multiply 76 (the base) by 15, the half of the perpendicular B C, and it produces 1140: or you may multiply the whole perpendicular by half the base, (or longest side,) it will produce the same: which divided by 160, (the square poles in an acre,) the quotient gives the content of that piece of land in acres; and what remains multiply by 4, and divide by the same divisor, and it quotes roods, &c.

Note. Always the perpendicular is drawn from the opposite angle to the base, or longest side, as in the following figure:



The Operation.

76 The base.
15 Half the perpendicular.

160 1140 (7 acres $\frac{2}{16}$ or $\frac{1}{8}$.
112

All other pieces of land (for the most part) must be divided into triangles, and when measured their contents added together.

Suppose an oblong plat of ground contains 35 poles broad, and 185 poles long, how many acres is the content?

Rule.

Multiply the length in poles by the breadth, and divide the product by 160 (the square poles in an acre) and the quotient will be the answer in acres: and if the remainder

be $\left\{\begin{matrix}120\\80\\40\end{matrix}\right\}$ its value is $\left\{\begin{matrix}\frac{3}{4}\\\frac{1}{2}\\\frac{1}{4}\end{matrix}\right\}$ of an acre.

The Work.

185 the length.
35 the breadth.

925
555

160) 6475 (40 acres.
640.

75
Deduct 40 a quarter.

35 poles remain.

The content is 40 acres $\frac{1}{4}$ and 35 poles, or almost 40 acres and a half.

By the Four Pole Chain.

Example. There is a plat of ground that contains 16 chains and 25 links in breadth, and 57 chains and 30 links in length; what is the content of that land?

Ch. Link.
57, 30 length.
16, 25 breadth.

28650
11460
34380
5730

Acres 93,11250 cut off 5 places.
4

No roods ,45000
40

Poles 18,00000 Answ. 93 acres 18 poles.

Note, 1. Four roods or rods is 1 acre, 40 poles 1 rood or rod; so that 1 rood or rod is a quarter of an acre.

2. That the above chain, commonly called Gunter's Chain, contains four statute poles in 100 links, so that any number of chains are no more than so many 100 links; as 4 chains are 400 links, and 6 chains 600 links, &c.—160 statute poles are an acre, each pole being 16 feet and a half; therefore, in a square chain there are 16 square poles; and if you divide 160 (the square poles in an acre) by 16, the square poles in a chain, the quotient is 10, the square chains in an acre.

A square chain contains 10000 square links, (or 100 multiplied by 100,) and therefore it follows, that an acre contains 100000 square links.

To reduce Statute to Customary Measure.

According to the Statute made in the 33d of Edward the First, and another in the 25th of Queen Elizabeth, a statute pole is 16 feet and a half long, as said before; but in divers parts of England there are used poles of 18, others of 21, and some of 24 feet long, called customary measure, being in use according to the humour or custom of the place where they are taken. To turn therefore one sort of measure into the other, (admit statute measure to be turned into customary,) do thus: multiply the number of acres, roods, and poles, statute measure, by the square half-yards, or square half-feet, in a square pole of statute measure, and divide the product by the square half-yards, or square half-feet, contained in the pole of the measure customary, and the quotient gives the answer in the latter, in acres, &c.

Example.

In 172 acres statute measure, how many acres of 18 feet to the pole or perch?

172 statute measure.
121 square half yards.

172
344
172

144) 20812 (144 acres $\frac{76}{144}$ customary measure.

In a statute pole are 11 half-yards, which squared make 121 square half-yards; and in a square pole of 18 feet are 144 square half-yards, &c. For the remainder work as before, viz. by multiplying it by 4, &c. and the next remainder by 40, &c. as spoken of before: So that the answer is, that 172 acres statute measure, make 144 acres 2 roods and 4 poles, of such customary measure.

An Example to the contrary.

In 543 customary acres of 18 feet to the pole, how many acres of statute measure, being 16 feet and a half to the pole?

543 customary.
144 square half-yards in a customary acre.

2172
2172
543

121) 78192 (646 the statute measure.
726

55, &c.

The remainder 26 multiplied by 4 produces 104, which not amounting to a rood, should be multiplied by 40, their product is 4160; which divided by 121, quotes 34 perches, and 46 remains. So the answer is, that 543 customary acres, of 18 feet to the pole, makes 646 acres, 34 poles, and $\frac{46}{121}$ of a pole.

Note. Customary acres, as well as statute acres, contain 160 square poles or perches: the excess of bigness is by the bigness of the pole.

Solid Measure.

Is that of timber, stone, digging, liquids, &c. and the rule for working is to multiply the length, taken in inches, and the breadth together, and then that product by the depth or thickness, and the last product will be the content in cubic inches, which, if timber or stone, divide by 1728, (the cubic inches in a foot solid,) and the quotient gives the answer in solid feet.

Example.

If a tree be 16 feet long, and 18 inches square, how many solid feet does it contain?

Multiply { 18 / 18 } = 324

16
12

192 the length in inches.
324 breadth and thickness.

768
384
576

1728) 62208 (36 feet.
5184

10368
10368

Decimally.	By Practice.
Square 1,5	1 6
1,5	1 6
2,25 breadth.	1 6
16 length.	6 inch. ½ 9
36,00 Answer.	2 3
	4×4=16
	9 0
	4
	36 0 feet. Answer.

Solid Measure.

40 feet of round } timber is a ton or load.
50 feet of hewn }

1728 inches is a foot of stone or timber.

27 feet is a yard.

282 inches is a gallon of ale or beer.

231 inches is a gallon of wine.

Suppose there is given an oblong piece of timber, whose breadth is 225 and thickness 164 feet, and length 365 feet, how many solid feet are contained therein?

225 breadth.
164 thickness.

900
1350
225

36900
365 length.

184500
221400
110700

13468500 solid feet. Answer.

Of Timber Measure.

When at any time you would know the content of any piece of timber by vulgar or decimal arithmetic, observe what follows, viz. The tree being girted, and one-fourth part taken for the side of the square, multiply the length of the side of the square in inches into itself, and that product by the length in feet; which last product divide by 144: but if you multiply by the length in inches, then your divisor must be 1728, and if any thing remains, divide such remainder by 12, and the quotient will be the odd inches.

Example. Suppose a piece of timber 15 feet long, and a quarter of the girt 42 inches; what is the content of that piece?

The Work.

42 inches in the side of the square.
42

84
168

1764
15 feet in length.

F. In.
144) 26460 (183—9
144

1206
1152

540
432

12) 108 (9 inches.

(0)

Note. In this example, 1764 is multiplied by 15 in one line. But the foregoing example may be worked shorter by decimals, thus:

Squared { 3,5 the sides of the square 42 inches.
{ 3,5

175
105

12,25 the product are feet.
15 feet the length.

6125
1225

183,75 the content, viz. $183\frac{75}{100}$, $\frac{3}{4}$ as before.

But this common way of taking $\frac{1}{4}$ of the compass for the side of the square, which is equal to the content of the circle in round timber, is erroneous, and gives the solidity somewhat less than the true content; but the true way is to multiply half the diameter by half the compass, and then that product multiply by the length, which divide by 1728, and the quotient is the content. If you

cannot come to measure the end of the piece, you may know the diameter by this proportion, viz. as 22 is to 7, so is the compass to the diameter. Or you may find the side of a square of a round piece of timber by this rule, viz. multiply 2821 by the inches of the compass, and cut off four figures on the right hand of the product.

Example.

2821
inches 66 the compass.

16926
16926

18,6186
Answer, $18\frac{6}{10}$ inches nearly.

Having the breadth and depth of a piece of timber or stone, to know how much of the length of it will make a solid foot, multiply one with the other, and let the product be a divisor to 1728, thus:

24 broad.
18 thick.

192
24

432) 1728 } 4 inches in length.
1728 }

And thus you may make a table to serve all breadths and depths, by which much labour may be saved in multiplying and dividing, and yet measure any piece of timber thereby very exactly.

In square timber, you must make the inches squared a divisor to 1728, and the quotient will be the answer in inches of length, that will make a foot solid.

Example.

If a piece of timber be 8 inches square, what length of it will make a foot?

64) 1728 (27 Answer, 27 inches, or 2 feet
128 3 inches in length.

448
448

(0) Here the square of 8 is 64, &c.

Again, Suppose a piece be 18 inches square, what length will make a foot? Answer, 5 inches and 1-third.

The square of 18 is 324) 1728 ($5\frac{1}{3}\frac{0}{2}\frac{8}{4}$ equal to $\frac{1}{3}$.
1620

(108)

The usual way of tapering timber is by this method, viz. taking the dimensions in the middle, and multiplying that by the length; which is not accurate: but if the dimensions be taken in several places, and the mean be used, the content thus found will be near the truth.

Digging,

Is measured by the solid yard of 27 feet: that is, 3 times 3 is 9, and three times 9 is 27, by which are measured vaults or cellars, clay for bricks, &c. Other things are measured by the floor of 324 solid feet.

Example.

If a vault or cellar be digged 9 feet deep, $4\frac{1}{2}$ feet long, and 3 feet 9 inches broad; what is its content in solid yards?

$4\frac{1}{2}$ feet long.
9 deep.

$40\frac{1}{2}$
3 ft. 9 in. broad.

$121\frac{1}{2}$
6 inches $\frac{1}{2}$ $20\frac{1}{4}$
3 is $\frac{1}{2}$ of 6 10

27) $151\frac{3}{4}$ (5 yards 16 feet $\frac{3}{4}$.
135

(16)

How many yards of digging will there be in a vault that is 25 feet 4 inches long, 15 feet 8 inches broad, and $7\frac{1}{2}$ feet deep?

ft.	in.	
25	4	
		3 times 5 is 15.
76	0	
	5	
380	0	

	380	0
4 feet is $\frac{1}{3}$	8	$5\frac{1}{3}$
4 feet is $\frac{1}{3}$	8	$5\frac{1}{3}$
	396	$10\frac{2}{3}$
		$7\frac{1}{2}$
	2778	$2\frac{2}{3}$
	148	$5\frac{1}{3}$

27) 2926 8 (108 yards 10 feet 8 inches.
27

226
216

(10)

There is a moat that is 648 feet long, 24 feet broad, and 9 feet deep; how many floors?

648 feet long.
24 broad.

2592
1296

15552
9

Divide by 324) 139968 (432 floors.—Answer.
1296

1036
972

648
648

...

Solid bodies being frequently painted, it is necessary to know how to find the superficiality. To find the superficial content of a square, or any sided or rounded pillar: multiply the sum of the sides or circumference by the height in feet, and the product, divided by 9, will be square yards.

Of a Globe.

Multiply the circumference in feet by itself, and then that product by this decimal 0,0353678, and this last product will be the content in yards.

To find the superficial content of a pyramid or cone, multiply half the sum of the sides, or half the circumference of the base, by the slant height in feet; and the product divided by 9, will be the square height.

If the pyramid or cone be not complete, that is, if part of the top be wanting, add together the circumference at top and bottom, and half their sum being multiplied by the slant height, will be the superficial content.

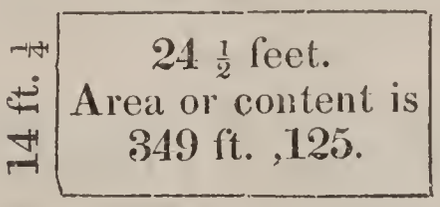
Note. A solid yard square of clay will make about 7 or 800 bricks; and the price of making is 7*s.* or 8*s.* a thousand; 3 bags (or bushels) and a half of lime, and half a load of sand, will lay 1000 bricks.

It may not here be improper, as well for refreshing the memory, as for improving the understanding, and furnishing the mind with proper notions and ideas of measuring, to give a short repetition, by demonstrative geometrical figures, to explain what has been verbally and arithmetically before expressed.

And first for *planometry*, or *superficial*, or *flat measure*; some of which is measured by the foot square: as are boards, glass, marble, freestone, and pavements. The dimensions are taken in feet and inches, and the content given in square feet.

Example.

Suppose there is an oblong or long square, let it be board, glass, or pavement, &c. that contains on the longest side (or the length) 24 feet and a half, and the shortest side or breadth, 14 feet 3 inches, as in the following figure, viz.



14,25 breadth.
24,5 length.

7125
5700
2850

349,125

Rule Multiply the length by the breadth, and cut off as many places to the right hand as there are decimals in the length and breadth.

Suppose a board or piece of glass be in the form of *figure the first*, called the rhombus, that is, in the shape of a common pane of glass, or diamond square.

Rule. To measure which, multiply the breadth A B, by the length of any of the sides (for they are all equal) and cut off as many places to the right hand as there are decimal places in both multiplicand and multiplier, as hinted before. As suppose one breadth A B, 8 feet 38 parts, and the length of the sides to be 8 feet 52 parts, then the work will appear thus:

ft. p.
8,52
8,38
——
6816
2556
6816
————
71,3976

Here the multiplication is as in whole numbers, and the content or answer is found to be 71 square feet, and $4\frac{1}{4}$ inches.

3976 is separated by a comma, as above directed, and are so many 10,000 parts of a foot.

Again, admit a piece of measurement to be in the form of a rhomboides: its length 17 feet 25 parts, and its breadth 8 feet 58 parts.

ft. p.
17,25 length.
8,58 breadth.
————
13800
8625
13800
————
148,0050 Answer, the content is 148 feet.

The forementioned figure has its opposite side equal, and its opposite angles alike.

Once more.

Suppose a board, piece of glass, pavement, or piece of land, to represent, or be in the form of, a triangle, or three-cornered figure, expressed as in the shape of *figure the third.* Every triangle is half an oblong, whose length and breadth is equal to the perpendicular and base.

Note. The dotted line is the perpendicular, the bottom line the base, and the line from the top of the perpendicular to the left angle of the base is called the hypothenuse.

The measuring of a triangle has already been shewn, and therefore I shall desist speaking any further thereto.

The *fourth figure* is called a trapezium, and consists of 4 sides. This figure, before it can be measured, must be divided into two triangles, viz. by a line drawn from one angle or corner, to the angle opposite to it, as in the figure.

Suppose the dimensions of the trapezium before described to be, viz. the base 16 feet 67; the one perpendicular 12 feet 50, and the other 9 feet 68, (as in figure 5,) what is the content?

Fig. 1.

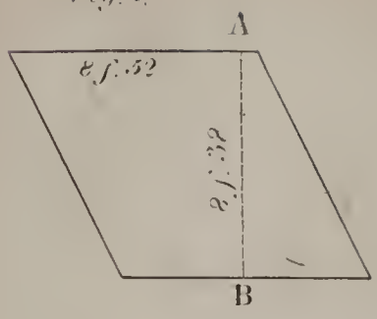


Fig. 2.

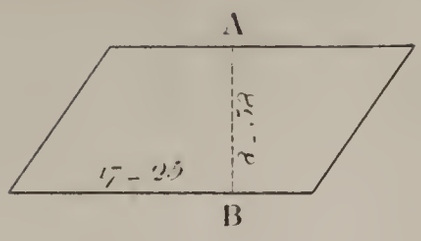


Fig. 3.

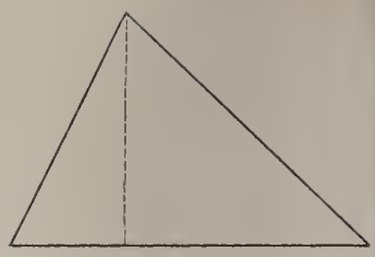


Fig. 4. Trapezium

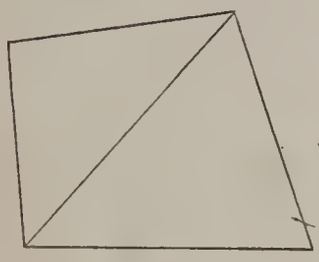


Fig. 5.

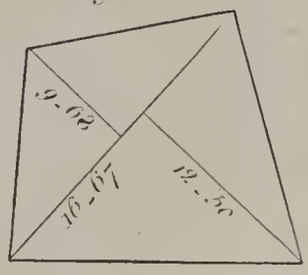


Fig. 6. Cube

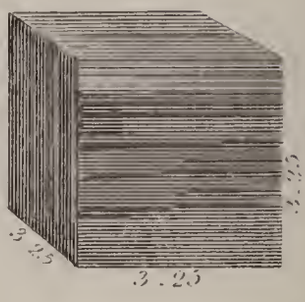


Fig. 7. Cone

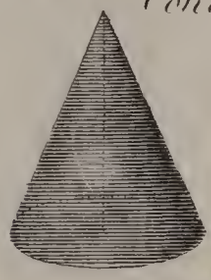


Fig. 8. Pyramid

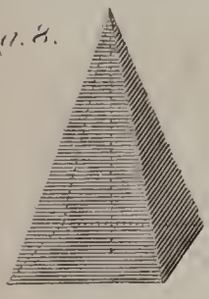


Fig. 9.

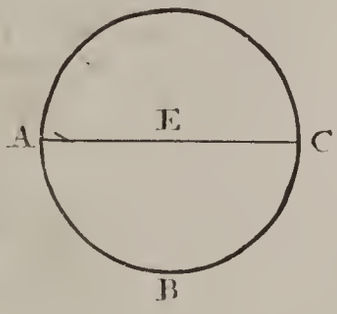


Fig. 10.

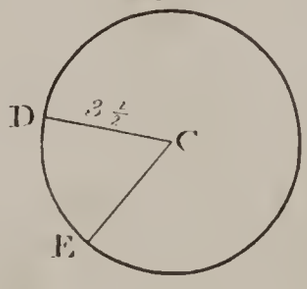


Fig. 11. Parallelopipedon

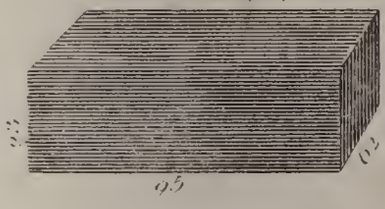


Fig. 12.

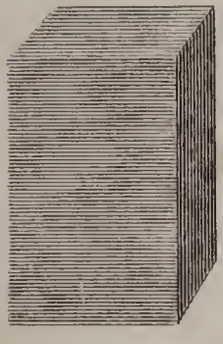


Fig. 13.

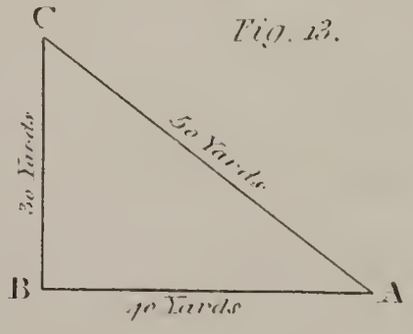


Fig. 14.

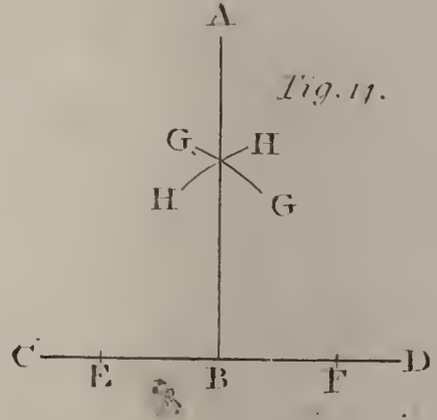


Fig. 15.

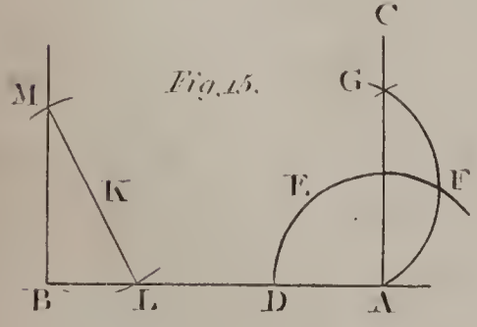


Fig. 16.

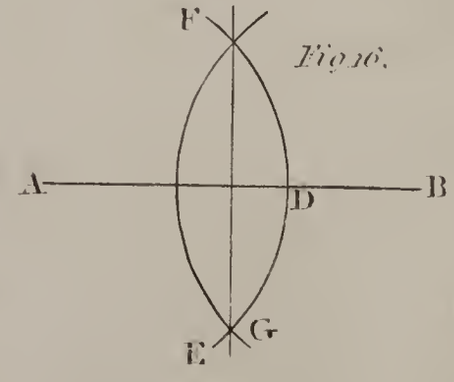


Fig. 17.

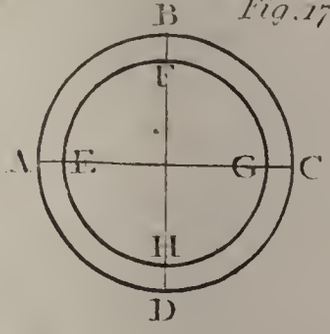


Fig. 18.

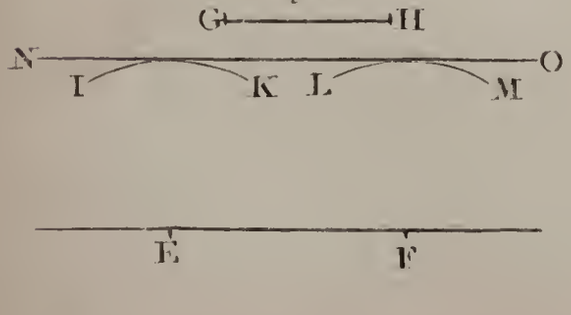


Fig. 19.

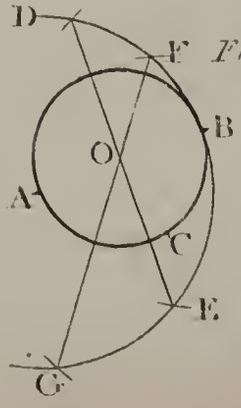
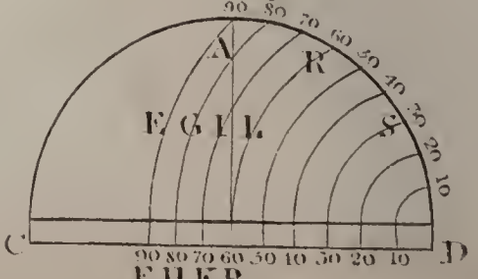


Fig. 20.



The Operation.

One perpendicular	12,50	Add.
The other	9,68	
The sum is	22,18	
The half sum is	11,09	which
multiply the whole base	16,67	
produces	184,8703	

which is, 184 feet, and $\frac{8703}{10000}$ of a foot, equal to $10\frac{1}{2}$ inches.

Note, 1. If two sides of a trapezium are parallel, that is, equidistant, then add them together, and half the sum multiplied by the nearest distance between those two sides gives the content. Or, if you measure in the middle between two sides or lines that are of equal length, the answer will be the same.

2. The painting, plastering, &c. of irregular pieces in the forms of triangles, or not, if divided as above, may be measured as before; and brought into yards (if the content is to be so given in) by dividing by 9, as before shewn.

Of Regular Figures.

Figures that have more than 4 sides are called polygons, and those of them that have their sides and angles equal, called regular polygons.

Regular polygons have their names from the number of their sides; thus a figure having

3	equal sides is called a	Trijon, or equilateral triangle.
4		Tetragon, or square.
5		Pentagon.
6		Hexagon.
7		Heptagon.
8		Octagon.
9		Nonagon.
10		Decagon.
11		Undecagon.
12		Dodecagon.
15		Quindecagon.

Of a Circle.

Figure the Ninth.

A circle is contained under one line, called the circumference or periphery; as A B C. All right lines drawn from the centre E to the circumference are equal, and called radiuses, or half-diameters; and the long line through the centre from A to C is the diameter.

To divide a circle into 6 equal parts, extend the compasses to half the diameter, as from A to the centre E, and the extent applied to the circumference will divide it into those parts.

The diameter A C divides the circle into two equal parts, each of which is called a semicircle; and if a semicircle be divided into two equal parts, those parts are called quadrants.

The question relating to the measuring of the circle and its parts, may be solved as follows:

1. The diameter being given, to find the circumference.

Rule. Multiply the number 3,141597 by the diameter, and the product will be the circumference.

Note. The number 3,1416 will be exact enough in most cases.

Example. The diameter of a circle being 11 inches, what is its circumference?

3,1416
11

3,1416
3,1416

Answer, 34,5576 (or $34\frac{60}{1250}$ inches.)

2. The diameter being given, to find the area.

Rule. Multiply the number 0,7853982 (or in common cases 0,7854) by the square of the diameter, and the product will be the area.

Example. What is the area of that circle whose diameter is 11 inches?

$11 \times 11 = 121$

0,7854
121

7854
15708
7854

Answer 95,0334

3. The circumference being given, to find the diameter.

Rule. Multiply the number 0,3183099 (or in common 0,31831) by the circumference, and the product will be the diameter.

Example. What is the diameter of that circle, whose circumference is $34\frac{1}{2}$ inches?

$34\frac{1}{2}$ decimally expressed, is 34,5

0,31831
34,5

159155
127324
95493

Answer 10,981695 (or almost 11 inches.)

4 The circumference of a circle being given, to find its area.

Rule. Multiply the number 0,0795775 (or in common 0,0796) by the square of the circumference, and the product will be the area.

Example. What is the area of a circle, whose circumference is $34\frac{1}{2}$ inches?

34,5	1190,25
34,5	0,0796
1725	714150
1380	1071225
1035	833175
1190,25	Answer, 94,743900 (or almost $94\frac{3}{4}$ sq. inch.)

5. The area of a circle being given, to find its diameter.

Rule. Multiply the square root of the area by the number 1,12837, and the product will be the diameter.

Example. What is the diameter of that circle, whose area is 95,0334 square inches?

95,0334 (9,75	1,12837
81	9,75
187) 1403	564185
1309	789859
1945) 9434	1015533
9725	11,0016075

The square root of the area is 9,75 nearly; the diameter about 11 inches.

6. The area of a circle being given, to find its circumference.

Rule. Multiply the square foot of the area by the number 3,5449, and the product will be the circumference.

Example. What is the circumference of that circle whose area is 95,0334 square inches?

95,0334 (9,75 nearly.	3,5449
	9,75
	177245
	248143
	319041
	34,562775

Answer, The circumference is $34\frac{568}{1000}$ inches nearly.

7. To measure the sector of a circle. See *figure* 10.

Case the first. If the length of the arc D E, and the semidiameter, C E, be given.

Rule. Multiply the length of the arc by $\frac{1}{2}$ the semidiameter, and the product will be the area.

Case the second. If the number of degrees contained in the arc, and the semidiameter, be given.

Rule. Multiply the squares of the semidiameter by the number of degrees contained in the arc, and that product by the number 0,0087267, and the result will be the area required.

Example. Let the arc consist of 90 degrees, or $\frac{1}{4}$ of the circumference, and the semidiameter be $3\frac{1}{2}$.

3,5	12,25	0,0087267
3,5	90	1102,50
175	1102,50	4363350
105		174534
12,25		87267
		87267
		9,621186750

Of Solid Measure.

Solid or cube measure hath been already defined, as well as superficial measure; some of the figures of which are numbered 6, 7, and 8.

To measure a solid in form of a cube, which hath length, breadth, and thickness, all equal; you must multiply these into themselves; and the last product gives the solidity or content, either of wood or stone. A cube hath six sides, and is in shape like a die.

Examples. What is the solidity of a cube, whose side is 12 inches?

12
12
144
12
1728 the solid inches in a solid foot.

To measure a solid of unequal length, breadth, and thickness; multiply the length by the breadth, and the product by the height: the last product will be the solidity.

What is the solidity of a block of marble, whose length is 10 feet, breadth $5\frac{3}{4}$, and depth $3\frac{1}{2}$ feet?

5,75
3,5
2875
1725
20,125
10
201,250 the solidity.

The cone is measured by finding the superficial inches at the bottom or base thereof; which multiply by one-third of the inches in the length, and that product is the solid quantity in inches; which inches divide by 1728, and the quotient gives the answer in solid feet.

Example.

In finding the solidity of the cone, decimally, without dividing it by 1728.

Let the diameter of the base be 2 feet 6 inches, and the altitude 10 feet 6 inches.

```
    2,5 the diameter.
    2,5
   ----
    125
    50
   ----
   6,25
   ,7854
  ------
   2500
   3125
  5000
  4375
 --------
 4,908750 the area of the base.
      3,5 one-third of the height.
 --------
 24543750
 14726250
 --------
 17,1806250 the solidity in feet.
 --------
```

This method may serve for tapering timber, or for any other thing of the shape represented in figure 7.

To measure a Pyramid.

Rule. Multiply the area of the base or bottom by one-third of the perpendicular height, and the last product will be the content in solid feet; or one-third part of the area at the base, multiplied by the whole altitude, gives the content also.

Example of both ways.

Suppose there is given a square pyramid, (or figure like a spire steeple,) the side of whose base is $4\frac{1}{2}$ feet, and the perpendicular height 18 feet; what is the solid content?

4,5	6,75$\frac{1}{3}$	of 20,25 the area of the base.
4,5	18	the whole height.
225	5400	
180	675	
20,25	121,50	Answer, 121,50, as before.

$6\frac{1}{3}$ of the altitude.

121,50 Answer, 121 feet, and $\frac{50}{100}$ or $\frac{1}{2}$.

When one side of the base is longer than the other, as admit one to be $2\frac{1}{2}$ feet, and the other $1\frac{1}{2}$ feet, then multiply the length of the base by the breadth; and that product by one-third of the height, as before.

If the base be any polygon, find its area by the rule given in page 153; and then multiply it by $\frac{1}{3}$ of the height.

To measure the Frustum or Segment, i. e. *a Piece or Part of a Pyramid, whose Ends are similar regular Polygons.*

Multiply together the sides of the greater and lesser polygons; multiply also the difference of those sides by itself, and the $\frac{1}{3}$ part of the second product to the first product; multiply the sum by the height, and by the number which belongs to the polygon in page 153; so shall the last product be the solidity.

To measure the Frustum or Segment of a Cone.

Multiply together the diameters at the top and the bottom of the frustum, multiply also the difference by itself, add the $\frac{1}{3}$ pa t of the last product to the first; and multiply the sum by the heigh of the frustum, and by the number 0,7853982; so shall the last product be the solidity required.

Example. What is the solidity of the frustum of a cone; the diameter of the greater end being 4 feet, that of the lesser end 2 feet, and the height 9 feet?

4	2 difference of diameter.
2	2

8 product of diameters 4; $\frac{1}{3}$ of which is $1\frac{1}{3}$.

8 added to $1\frac{1}{3}$ is $9\frac{1}{3}$, which multiplied by 9, the height, produces 84.

Then multiply 0,7854
by 84

31416
62832

Solidity 65,9736

Of GAUGING.

There is a near sort of kindred or affinity between the art of measuring timber, and that of gauging or measuring liquors; for both are performed by cube or solid measure, and therefore not improper closely to follow one another. For as often as there is found 1728 solid or cubic inches in a piece of timber, (of what form soever,) so many solid feet it is said to contain: so likewise in the art of gauging; so many times as 282 (the solid inches in a beer or ale gallon) are found in any vessel of such liquor, so many gallons is such a vessel said to hold. And so of wine; but in that the divisor alters, it being 231 solid or cubic inches. And the gallon of dry measure contains $272\frac{3}{4}$ cubical inches.

Note. Every cubical foot in beer or ale measure contains 6 gallons and almost a pint. The same in wine measure is 7 gallons and almost 2 quarts.

A cubical foot of dry measure contains 6 gallons and somewhat above $\frac{1}{3}$ of a gallon.

141 inches make 2 quarts of beer or ale, $70\frac{1}{2}$ inches 1 quart, and $35\frac{1}{4}$ inches 1 pint.

To find the content of any vessel that hath the form of a cube; that is, a figure whose breadth, depth, and length, are all equal, and is very well represented by the shape of a die commonly played withal.

Rule. Multiply the side into itself, and then again that product by the side; which last product, if for beer or ale, divide by 282, the inches in a beer or ale gallon: and for wine, brandy, &c. 231, the inches contained in a wine gallon.

Example.

Suppose a cube, whose side is 79 inches, I demand the solid content in beer and wine gallons?

```
  79          282) 493030 (1748 beer or ale gallons.
  79               282
 ---          ----
 711          2110
 553          1974
------        ----
6241          1363
  79          1128
------        ----
56169          2359
43687          2256
------        ----
493039 cubic inch. (103)
------        ----
```

```
231) 493039 (2134 wine galls.
     462
     ---
     310
     231
     ---
     793
     693
     ---
     1009
      924
     ---
      (85)
```

To find the content of a parallelopipedon, which is a solid figure contained under six sides, of which the opposite are parallel, and of the form of figure the 12th.

Rule. Multiply the length by the breadth, and that product by the depth; and then divide by 282 for beer or ale, and 231 for wine.

Admit the length to be 95 inches, and the breadth 62 inches, and the depth 23 inches; what is the content in beer and wine gallons?

95 length.
62 breadth.

190
570

5890
23 depth.

17670
11780

282) 135470 (480 beer gallons.
1128

2267
2256

(110)

231) 135470 (586 wine gallons.
1155

1997
1848

1490
1386

(104)

To gauge a Back or Square Tun.

Example.

Suppose its length 112 inches, breadth 72 inches, and its depth 48 inches; what is its content in solid inches, and also its content in beer gallons?

112 length.
72 breadth.

224
784

8064
48 depth.

64512
32256

387072 solid inches

282) 387072 (1372 gallons. Ans.
282

1050
846

2047
1974

732
564

(168)

To bring these gallons into barrels, divide them by 36, the gallons in a barrel of beer, thus:

36) 1372 (38
108

292
288

(4)

Ans. 38 barrels and $\frac{4}{36}$ or $\frac{1}{9}$ of a barrel: and for the remainder 168, it is the $\frac{28}{47}$ of a gallon.

Note. The duty of excise upon strong beer and ale, is 8s. per barrel; brewers are allowed three barrels in twenty-three for leakage, &c. both for strong and small beer; and for ale, two in twenty-two: so that the nett excise of a barrel of strong beer to be paid by the common brewers, is 6*s.* 7$\frac{3}{4}$*d.* and $\frac{7}{23}$ of a farthing; and of ale, 6*s.* 10$\frac{3}{4}$*d.* and $\frac{7}{11}$ of a farthing; and for small beer, 1*s.* 3$\frac{1}{2}$*d.* and $\frac{2}{3}$ of a farthing.

How to gauge a Copper, round Tub, or Cask.

If it be of equal dimensions both at top and bottom, find the cube inches that it contains, and then bring it into gallons as before.

But if it be wider at the top than the bottom, or the contrary, then take the width or diameter of the tub somewhat above the middle, next to the broadest end, if it be taper; or find the mean diameter thus: Suppose the bung diameter to be 26 inches, and the head diameter of the cask to be 23 inches, the difference between which is 3 inches, two-thirds of which make two inches; which added to the lesser of the two diameters, make 35 for the mean diameter sought. Having the mean diameter, proceed to find the content in solid inches thus: First, square the mean diameter, multiply that square by 0,7853, and the product will give the content of the liquor at one inch deep, and this multiplied by the length, will give the solid inches in the copper, tub, or cask.

Suppose the mean diameter to be 72 inches, and the length 56 inches.

72	4071,5136
72	56
144	244290816
504	203575680
5184 squ.	228004,7616
,7854	
20736	
25920	
41472	
36288	
4071,5136 Content at one inch deep.	

The above-found solid inches 228004,7616 brought into gallons, make 808, and 148 solid inches remain, something above half a gallon; in all 22 barrels 16 gallons and $\frac{1}{2}$ of beer.

Again, Admit the mean diameter of a cask of wine to be 14 inches, and the length 72 inches, what is the content in wine gallons?

```
  14          0,7854
  14            196
 ---          ------
  56           47124
  14           70686
 ---           7854
 196          -------
             153,9384
                  72
             -------
             3078768
            10775688
            --------
231) 11083,5648 (47,9
     924
     ---
     1843
     1617        Answer, 48 gallons nearly.
     ----
     2265
     2079
     ----
      186, &c.
```

The contents of a spheroid may be found thus: Multiply the square of the shortest diameter by the longest diameter, and then divide by 538 for beer gallons, and by 441 for wine gallons.

Suppose a spheroid, whose shortest diameter is 74 inches, and the longest 125 inches; what is the content in beer and wine gallons?

```
  74
  74
 ---
 296
 518
-----
 5476 the square of the shortest diameter.
  125 the longest diameter.
27380
65712
-----
684500
```

538) 684500 (1272 gallons of beer.
538...

1465, &c.

(164)

441) 684500 (1552 gallons of wine.
441

2435, &c.

(68)

To find the content of a frustum of a spheroid: To twice the square of the bung diameter, add once the square of the head, and multiply that sum by the length; then for beer divide by 1077; and for wine gallons divide by 882.

A cask whose bung diameter is 23 inches, head diameter 21 inches, and length 27 inches; what is the content in beer and wine gallons?

23	21
23	21
69	21
46	42
529	441

Add { 529 } Twice the square of the bung diameter.
{ 529 }
{ 441 } Once that of the head diameter.

1499
27 the length.

10493
2998

1077) 40473 (37 beer gallons.
3231.

8163
7539

(624)

882) 40473 (45 wine gallons.
3528.

5193
4410

(783)

The Square Root.

1st, A square number ariseth from the multiplication of a number into itself, the number so multiplied being called the root; thus, 4 multiplied by 4, produceth 16; for 16 is a square number, and 4 is the root thereof; so also 4 is the square of 2, for twice 2 is 4; and 9 is the root of 81, for 9 times 9 is 81, &c.

2dly, To extract the square root of any number, is to find another number, which multiplied by, or into, itself, produces the number given; and after the root is found, such a multiplication is a proof of the work.

3dly, Square numbers are either single or compound.

4thly, All the single square numbers, with their respective roots, are contained in the following table, viz.

Roots	1	2	3	4	5	6	7	8	9
Squares	1	4	9	16	25	36	49	64	81

5thly, When the square root of any number, less than 100, is required, and that number is not expressed in the foregoing table, which (being less) comes the nearest to the given number. Thus if the square root of 50 were required, then since 49 is the nearest square number in the table, therefore its root 7 will be the root of the given number nearly.

6thly, A compound square number is that which is produced by a number consisting of more places than one, multiplied by itself, and is never less than 100; so 729 is a compound square number, produced by the multiplying 27 into itself.

7thly, The root of any number, under 100, may be easily known by the foregoing table of single squares; but to extract the root of a compound number of several places, observe the following directions.

Example 1.

Let the square root of the number 45796 be required.

Set a point over the place of the units thus, 45796, and so successively over every second figure towards the left hand, as thus, 45796. But in decimals you must point from the place of units towards the right hand, omitting one place, as above; and if the place of decimals are odd, affix a cipher towards the right hand of them, to make them even. Your number thus prepared, draw a crooked line on the right of the number, as in Division; and, indeed, the operation of the square root is not much unlike Division; only there the divisor is fixed, and in the square root we are to find a new one for each operation. Having made a crooked line, thus 45796(seek in the foregoing table for the nearest square to the first point on the left hand, which here is 4, the root of

which is 2, which root place on the right hand of the crooked line, and set its square 4 under the same point, as below:

```
45796 (2
4
----
( )
```

Then subtract it, and there remains 0; to the remainder bring down the next point 57, thus:

```
45796 (2
4
----
 57
```

Which call the resolvend; then double the root of the first point, and place it on the left hand of the resolvend, thus:

```
45796 (2
4
----
4) 57
```

Call the 4, the double of the root 2, thus placed on the left hand of the crooked line, the divisor, and see how often 4, the divisor, can be taken in 5, the first figure of the resolvend 57, (for you are to omit the last figure towards the right hand) which here is 1; place 1 to the right of the root 2, and also of the divisor 4, thus:

```
45796 (21
4
----
41) 57
```

Then multiply the divisor (now 41) by the figure last placed in the root, viz. 1, placed under the resolvend, and subtract it therefrom.

```
45796 (21
4
----
41) 57
   41
----
   16
```

Then bring down the next point, viz. 96, and place it at the right of the remainder 16, for a new resolvend or dividend; next double the unit figure of the last divisor, viz. 1, and prefix the remaining figure, which makes 42, for a new divisor to the new resolvend 1696, thus:

```
45796 (21
4
---
41) 57
    41
    --
42) 1696
    ----
```

Then seek how oft 42 in 169, (still reserving or omitting the unit figure of the resolvend or dividend, as aforesaid,) and I find I can have it 4 times, which 4 I place in the quotient and in the divisor, and, proceeding as before, the work will appear thus:

```
45796 (214 Root.
4
---
41) 57    Resolvend.
    41
    --
424) 1696 Resolvend.
     1696 Product.
     ----
      (0)
```

In the last operation, I place 4 in the root, and likewise in the divisor 42, which makes the new divisor 424, to the resolvend 1696; which divisor multiplied by 4, the figure placed in the root, produces 1696; equal with the dividend or resolvend aforesaid, as in the operation may be seen. Therefore the square root of 45796 is 214; for 214 multiplied into itself, produces 45796, the number whose square root was sought.

Example 2.

What is the square root of 12299049 (3507 the root.

```
                9
               ---
1st divisor 65) 329    Resolvend.
                325    Product.
                ---
2d divisor  710) 4904  Resolvend.
                 0000  Product.
                 ----
3d divisor 7007) 49049 Resolvend.
                 49049
                 -----
                   (0)
```

Example 3, *performed decimally.*

160,000000 (12,649 root.
1

1st divisor 22) 60
44

2d divisor 246) 1600
1476

3d divisor 2524) 12400
10096

4th divisor 25289) 230400
227601

2799

Note, 1. That when the divisor cannot be had in the resolvend, then place a cipher in the quotient, and also on the right of the divisor, and then bring down the next square, &c. as in the second example above may be seen.

2. If any remainder happen to be after extraction, you may proceed by annexing pairs of ciphers to the left of the given number, and so come to what exactness you please.

3. Such numbers given for extraction that leave remainders, are by some called *irrationals*, because their roots cannot be exactly discovered, but still there will something remain, though you work by whole numbers or fractions; as in the example above, where the remainder is 2799.

The EXTRACTION *of the* CUBE ROOT.

To extract the cube root of any number, is to find another number, which multiplied by itself, and that product by the number found, produces the number given for extraction.

All single cube numbers, with their respective roots, are contained in the following table.

Roots	1	2	3	4	5	6	7	8	9
Cubes	1	8	27	64	125	216	343	512	729

1st, To prepare any number for extraction make a point over units, and so successively over every third figure, towards

the left-hand in integers, missing two between each point: but in decimals you must point from the place of units to the right hand, &c.

Example.

Extract the cube root of 46656, prepared thus, as above directed.

4̇6̇6̇5̇6̇

Here are but two points, therefore the root will have but two places.

2dly, The number being prepared, seek in the foregoing table the nearest root of the first point or period 46, which you will find to be 3, which place in the quotient thus, 4̇6̇6̇5̇6̇ (3 the cube whereof is 27, which place under your first period 46, as in the margin; subtract it from 46, and there rests 19; this is your first work, and no more to be repeated. Then to the remainder 19, bring down the next period, viz. 656, (which is the last,) and place it on the right of the remainder 19.

46656
27

19

4̇6̇6̇5̇6̇ (3
27

19656 Resolvend.

Then draw a line under the resolvend: next square the 3 placed in the quotient, which makes 9, which multiplied by 300, makes 2700 for a divisor, which place accordingly thus:

4̇6̇6̇5̇6̇ (3
27

2700) 19656

Then seek how often 2 in 19? Answer, But 6 times, because of the increase that will come from the quotient, and place 6 in the quotient: then multiply the divisor by 6, and the product will be 16200; which place orderly under the resolvend, thus:

4̇6̇6̇5̇6̇ (36
27

2700) 19656

16200

Then proceed to find the increase coming from the quotient, thus: Square your last figure 6, and it makes 36; which multi-

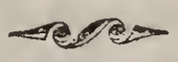
plied by 3, the other figure of the quotient, it gives 108: which multiplied by 30, makes 3240. This place also orderly under the last number before set down, viz. 16200, and the work will appear thus:

```
46656 (36
27
---
2700) 19656
---
16200
 3240
```

Then cube the figure last placed in the quotient, viz. 6, and it makes 216: which place orderly likewise under the line 3240; add the three lines together, and they make 19656; which is equal to the resolvend above, viz. 19656, and there being no more periods to bring down, I see the work is finished, and find the cube root of 46656 to be 36.

This will appear to be true if the root 36 be multiplied by 36, and that product by 36 again, for then the result will be 46656, as in the following operation.

```
 36
 36
---
 216
108
---
1296
  36
---
7776
3888
---
46656 proof.
```



Some Uses of the SQUARE *and* CUBE ROOT.

1. To find a mean proportional between two numbers.

Rule. The square root of the product of the given numbers is the mean proportional sought, so the mean proportional between 16 and 64, will be 32; for 16 multiplied by 64 produces 1024, and the square of 32 is also 1024. This is of use in finding the side of a square equal to any parallelogram, rhombus, rhomboides, triangle, or regular polygon.

2. To find the side of a square equal to the area of a given superficies.

Rule. The square root of the content to any given superficies is the side of the square. So if the content of a given circle be 160, the side of the square will be 12,649.

3. The area of a circle being given, to find the circumference. See page 154.

4. The area of a circle being given, to find the diameter. See page 155.

5. Any two sides of a right-angled triangle being given, to find the third side.

This depends upon a mathematical proposition, in which it is proved, that the square of the hypothenuse, or longest side of a right-angled triangle, is equal to the sum of the squares of the base and perpendicular, that is, of the other two sides. *See figure* 13.

Case 1. Let the base or ground B A represent the breadth of a moat or ditch, and the perpendicular B C the height of a castle, tower, or city wall; and the hypothenuse A C the length of a scaling-ladder.

In this figure the base A B is supposed to contain 40 yards; and the perpendicular, or height of the tower or wall, 30 yards; what length will the hypothenuse A C, or scaling-ladder, be?

Rule. The square root of the sum, and the squares of the base and perpendicular, is the length of the hypothenuse. See the work.

1600 the square of the base 40
900 the square of the perpendicular 30

The sum 2500 (50 yards the root, or length of the scaling ladder.
25

---

(0)

Case 2. If the length of the base, or breadth of the ditch, were required; then the square root of the difference of the squares of the hypothenuse and perpendicular is the length of the base, or breadth of the ditch or moat. See the work.

2500 the square of the hypothenuse A C
900 the square of the perpendicular B C

The diff. 1600 (40 yards the root, or breadth of the ditch.
16

---

(0)

Case 3. If the height of the tower or perpendicular B C were required; then the square root of the difference of the squares of the hypothenuse and base, is the height of the perpendicular B C.

6. Any number of men being given to be formed into a square battalion; to find the number of rank and file.

Rule. The square root of the number of men given, will be the number of men to be placed in rank and file.

Example. Admit an army of 32400 men were to be formed into a square battalion; the square root of 32400 will be found to be 110, and so many men must be placed in rank and also file.

7. To find the side of a square, polygon, or the diameter of a circle, which shall be to any other given square, similar polygon, or circle, in given proportion.

Rule. Since like surfaces are to each other, in a duplicate proportion of their sides; therefore,

As the given circle, square, or polygon, is to the required circle, square, or polygon; so is the square of the diameter or the side of the first, to the square of the diameter or the side of the second.

Then the square root of the result of the above proportion will be the diameter of the side required.

Examples.

There is a circle whose diameter is 11; what will the diameter of that circle be, whose area is 4 times the area thereof?

Here 11 times 11 is 121: and

As 1———4———121

4

---

484 (22 the Answer.

4

---

42) 84

84

There are two smaller polygons, whose areas are as 9 to 25, and the side of the lesser is 12 yards; what is the side of the greater?

Here 12 times 12 is 144: and

As 9———25———144

25

720

288

---

9) 3600

---

400 (20 the Answer.

4

000

8. The uses of the Cube Root are to find out the dimensions of like solids, as globes, cylinders, cubes, &c.

Rule. Since like solids are to each other, as the cubes of the like sides or diameter; therefore,

As the content or weight of a given solid, to the content o weight of another like solid; so is the cube of the side or diameter of one, to the cube of the side or diameter of the other.

Then the cube root of the result will be the length of the side or diameter required.

Examples.

If a bullet that weighs 72lb. is 8 inches in diameter, what will be the diameter of that bullet that weigh 9lb.?

Here the cube of 8 is 512: and

As 72———512———9———64 inches diameter.

9

72) 4608 (64
432

288
288

Then the cube root of 64, viz. 4, is the diameter required.

If a ship of 100 tons be 44 feet long at the keel, of what length must the keel of a ship be that carries 220 tons?

Say, as 100 is to 200; so the cube of 44, viz. 85184, to 187404,8: whose cube root is 57,226, the length of the keel sought.

There is a cubical vessel, whose side is 12 inches, and it is required to find the side of a vessel that holds three times as much.

Here the cube of twelve is 1728, which multiplied by

3

Produces 5184

The cube root of which is 17,306, the answer required, or to be sought.

A Rule to find the Length of the Masts of a Ship.

Two-thirds the length of the keel, and the breadth of the beam, is the length of the main-mast; and the rule is therefore to multiply the length of the keel by 2, and to divide the product by 3, and then to the quotient add the breadth of the beam, and the total is the length of the main-mast.

Example. Suppose a ship to be 108 feet by the keel, and 40 feet by the beam what is the length of her main-mast?

108 feet by the keel.
2

3) 216
Add { 72 two-thirds of the keel.
{ 40 the breadth of the beam.
Answer, 112 feet.

Rule 2. *To find the Length and Thickness of Masts and Yards.*

The way to find the length of the main-mast, is to add the breadth of the beam and the depth of the hold in feet together, and divide the total by 1,5 feet, and the quotient will be the length of the main-mast in yards.

Example. Admit a ship whose keel in length is 73 feet, and the breadth of the beam 28,5 feet, and the depth of the hold 12 feet; what is the length of the main-mast?

feet.
28,5 breadth of the beam.
12,0 depth of the hold.

1,5) 40,5 (27 yards, or 81 feet. Answer.
30

105
105

To find the thickness of the mast; having the length, say, by the rule of proportion, (or rule of three,) if 84 feet long require 28 inches thick, what 81 feet long?

F. L. In. thick. F. L.
If 84——28——81
81

28
224

84) 2268 (27 inches thick. Answer.
168

588
588

The Construction of some useful GEOMETRICAL PROBLEMS.

At a given point near the middle of a right line, given to erect a perpendicular. See *figure* 14.

Let C D be the line given: to have a perpendicular erected on it from the point B; with the compasses opened at a con-

venient distance, place one foot at the point B, and with the other make the two marks E and F, on either side of B; then, having the same, or any other more convenient distance in the compasses, set one point on E, and with the other describe the arc G G; which being done, without altering the distance last used, set one foot at F, and with the other describe the arc H H, crossing the former at the point A: through which intersection with a ruler draw a line from A to B, which will be perpendicular to the line C D.

2. How to raise a perpendicular at or near the end of a line.

This is effected several ways: but I shall instance only two, which are very easy. See *figure* 15.

1st, Suppose the line A B be given to raise a perpendicular near the end A.

First, open your compasses to a convenient distance, and set one foot on the point A, and with the other describe the arc F E D; then with one foot of the compasses in D, (they retaining the same distance,) cross the arc in E; and then setting one foot in E, with the other make the arc A F G, crossing the first arc in F. Again, set one foot in F, and with the other describe the small arc H H, crossing the former in the point C, to the line A C; so the line A C being drawn, will be the perpendicular required.

2dly, Admit B to be the point given on which to draw the perpendicular B I. Open the compasses to any convenient distance; and setting one foot on the point B, pitch down the other foot at random, as suppose at K, then the foot resting in K, turn the other about till it cross the line A B in L; then draw the line K L, and continue the same beyond K, setting off the same distance K L, (at which the compasses already stand,) from K to M, and a line drawn from B through M, will be the perpendicular required.

3. How to divide a right line into two equal parts. See *figure* 16.

Suppose the line A B be given to be divided into two equal parts. Take in the compasses any distance above half the length of A B, and setting one foot on the point A, with the other draw the arc F D E; then (with the compasses unaltered) set one foot in B, and with the other cross the former arc both above and below the line, in the points F and G: then a line drawn from F to G shall intersect or cut the given line in H, and divide the line A B into equal parts, A H and H B.

4. A line being given, how to draw another line parallel thereunto, at any distance required, or through any point assigned.

Of parallel lines there are two sorts, viz. straight or circular. And all circles drawn on the same centre, whether greater or lesser one than the other, are said to be parallel or concentric, that is, having one common centre. See *figure* 17.

In this figure the circle A B C D is concentric or parallel to the circle E F G H, because both of them are drawn from the same centre. The line A C is the diameter of the greater circle, and the line E G of the lesser circle. And all right lines drawn from

the centre to either of the circumferences, are equal with respect to their periphery. Such lines are called half-diameters, and sometimes the radius of the circle, and will divide the circle into 6 equal parts, each containing 60 degrees, and the whole circle 360; into which all the greater circles of the sphere are supposed to be divided.

Of parallel right Lines.

Right-lined parallels, are lines drawn on a plane of equal length and distance; and though infinitely extended will never meet, and in all parts retain an equal distance, such as these underneath.

B C

C D

To draw a right line parallel to another right line at a distance given. See *figure* 18.

Take in your compasses the given distance G H, then setting one foot in E, draw the arc I K, then moving to F, describe the arc L M; then laying a ruler on the top of the two arcs, just touching them, draw the line N O, which will be parallel to the given line E F.

5. Through any three points (not in a straight line) to describe a circle. See *figure* 19.

Let the points given be A, B, and C, through which it is required that a circle be drawn. First, set one foot of the compasses in one of the given points, as suppose in A, and extend the other foot to B, another of the points, and draw the arc of a circle C F D, then (the compasses not altered) set one foot in B, and with the other cross the said arc with two small arcs, in the points D and E, and draw the line D E. Thirdly, set one foot in C, (the compasses being at the same distance,) and with the other foot cross the first arc G F D in the points F and G, and draw the line F G, crossing the line D E in the point O, which is the centre sought for; in which place one foot of the compasses, and describe the circle at the distance O A, and it will pass through all the given points, A, B, and C.

How to make a line of chords geometrically to any assigned length or radius.

A line of chords is 90 degrees of the arc of a circle transferred from the limb of the circle, to a straight line; now every circle, whether great or small, is divided (or supposed to be) into 360 equal parts called degrees; so the semi or half circle contains 180, the quadrant or quarter 90, and the radius or semidiameter, (which is that line with which the circle or semicircle is drawn or described) is always equal to 60 degrees of that circle which it describes, and therefore 60 degrees of a line of chords is called the radius thereof.

To make a line of chords; as in *figure* 20.

First draw a line to any length, as C B D, and on the middle thereof erect the perpendicular A B; next open your compasses to the radius or length that you would have your line of chords be

of; which admit A B, and with that distance on B as the centre, describe or draw the semicircle C A D, which is divided into two equal parts or quadrants by the perpendicular line A B. Thirdly, divide the arc or quadrant A D into 90 equal parts or degrees; which is done by taking the length of the line A B, and setting that distance on the quadrant A D, and from D to R; so is D R 60 degrees, and A R 30 degrees; then take the distance A R, and set from D to S; so is the quadrant divided into three equal parts, at the points S and R, each containing 30 degrees: this done, divide the several spaces between A R, R S, S D, into three equal parts, each of which will be 10 degrees, according as the numbers are seen and set apart to them; and these again divided into two equal parts, each part contains five degrees, and every one of those into five smaller: and so the whole quadrant is divided into 90 degrees. Fourthly, the quadrant A R S D being thus divided into 90 degrees, set one foot of the compasses in D, and open the foot to A, and describe the arc A E F, touching the line C D in F; so is the point F, upon the right line C D, the chord of 90 degrees. Fifthly, open the compasses from D to 80 degrees, and describe the arc 80 G H; so shall the point H be the chord of 80 degrees. Sixthly, open the compasses from D to 70, describe the arc 70 I K; so is K the chord of 70 degrees. Again, open the compasses from D to R, the radius of 60 degrees, and describe the arc R L B, so is B the chord of 60 degrees, equal to the radius. Do the same by 50, 40, 30, 20, and 10, and then you will have the line D F divided into 90 equal parts, called chords.

Note. A degree is the 360th part of the globe or of any circle; each of which degrees is supposed to be divided into 60 parts called minutes; so that 45 minutes is three quarters of a degree, and 30 minutes half a degree, and 15 minutes one quarter of a degree.

Instrumental Arithmetic.

As problems or questions in measurement, &c. are resolved or answered arithmetically by the pen, so are they also instrumentally taken by compasses, from certain lines, &c. or rules made for that purpose, for the help of those that are deficient in arithmetic, or for a quicker dispatch of business, and such performances are called instrumental arithmetic; and of these instruments the most in vogue or use are these three: 1. the Carpenter's plain rule; 2. Gunter's line; 3. Coggeshall's sliding rule.

The Carpenter's plain Rule.

This rule is made use of in measuring boards and timber, being two feet in length, and divided into twenty-four parts or inches, and every one of those parts or inches subdivided into half inches, and each of those halves into quarters, and each quarter into two parts; so that every inch is divided into eight parts, and the whole length into 192 parts.

This rule is well known, and therefore not absolutely necessary of representation; but for the better understanding of it, the following one is given thus:

Under broad measure thus described.

1	2	3	4	5	6	1	7
12	6	4	3	2	2		
0	0	0	0	4	0		

This line begins at 6, and goes on to 36, within 4 inches of the rule on the right hand.

Its use.

In. deep.		Ft.	in.	pts.	
1	—	12	0	0	in length make a foot square.
2	—	6	0	0	
3	—	4	0	0	
4	—	3	0	0	
5	—	2	4	9	
6	—	2	0	0	

If a board be

By this table it is manifest, and easily understood, that a board of 4 inches requires 3 feet in length to make a foot square, and a piece of 3 inches broad will require 4 feet in length to make a foot square, &c.

At the other end of this rule, is a table called Under Timber Measure; and thus described:

1	2	3	4	5	6	7	8	
144	36	16	9	5	4	2	2	
0	0	0	0	9	0	11	3	

This line begins at 8 and a half, and goes on by divisions to 36.

In. square.		Ft.	In.	
1	—	144	0	in length make a solid foot.
2	—	36	0	
3	—	16	0	
4	—	9	0	
5	—	5	9	
6	—	4	0	
7	—	2	11	
8	—	2	3	

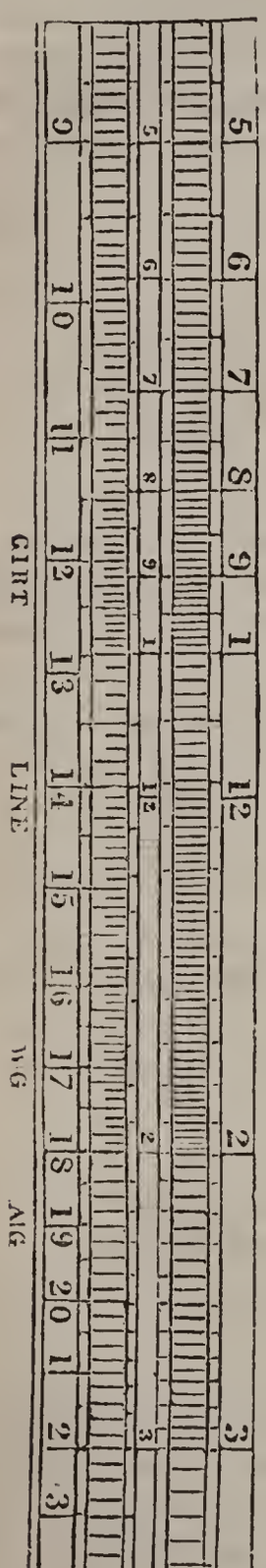
In a piece of timber of

By this table it is plain, that if a piece of timber be 6 inches square, then 4 feet in length of that piece will make a solid foot.

It is a common method with carpenters to add the breadth and thickness of a piece of timber in inches together, and call the half thereof the side of the square of that piece; but this method gives the content more than it is; and the greater the difference, the larger the error. But the true square may be found in Gunter's line, thus: place one point of the compasses upon the line at the thickness, and the other at the breadth, then half of that extent will reach from either the breadth or thickness to the side of the true square in inches.

Gunter's Line.

This line is commonly set on the carpenter's plain rule, and consists of two lines numbered 1, 2, 3, &c. one set at the end of the other, and of which the following is a section:



To prove the line by the compasses, observe, that the distance from 1 to 2 is equal to 2 to 4, from 5 to 10 the distance from 4 to 8, and 4 to 8 from 3 to 6.

To number on Gunter's line. Observe, that the figures 1, 2, 3, 4, 5, 6, 7, 8, 9, sometimes signify themselves simply or alone; at other times 10, 20, 30, 40, &c. Again, at other times, 100, 200, 300, or 1000, &c.

To find a number on the line, as suppose 134. For the figure 1, account one on the line; and for 3, take 3 of the largest divisions; and for 4 take 4 of the smallest divisions, and that is the point. Again, to find 750 on the line: for 7 take 7 on the line, for 50 take 5 of the great divisions, and that is the point.

To find a small number on the line, as suppose 12. For 10 take 1 as before, and for 2, take two of the large divisions, and that is the point.

In measuring boards or timber, it is best to have a line of two feet long, and compasses one foot long.

Note, 1. Let the measurement be by the inch, foot, yard, pole, rod, &c. it is best to have it decimally divided, or so supposed, that is, into 10th parts.

2. That if one point of the compasses reach beyond the line in the work, remove the other point to the same figure or place on the other line.

Multiplication by Gunter's Line.

To multiply 5 by 7, set one foot of the compasses on it in the left-hand line, and extend the other to 5 upwards, or towards the right-hand, and with the same extent place one foot in 7, and the other foot will fall on 35 in the right-hand line, which is the answer.

Division in Gunter's Line.

Example 1. Divide 63 by 3; extend from 3 to 1 downwards, or towards the left-hand, and the extent will reach the same way from 63 to 21 the quotient.

Note. In multiplying you must always extend upwards, that is, from 1 to 2, 3, 4, &c. and on the contrary, in dividing, extend downwards.

2. Divide 288*l.* equally among 16 men: extend from 16 to 1 downwards; and that extent will reach the same way, from 288*l.* to 18*l.* for each man.

3. Suppose 750*l.* were to be divided among 25 men: extend from 25 to 1 downwards; and that extent will reach the same way, from 750*l.* to 30*l.* each man's share.

The Rule of Three Direct.

Example 1. If 6 bushels of barley cost 11*s.* what will 40 bushels cost? Extend from 5 to 11 upwards; and that extent will reach the same way, from 40 to 88, the shillings required.

2. If 3 ells of holland cost 10*s.* 6*d.* what will 40 ells cost? Extend from 3 to $10\frac{1}{2}$ upwards; and that extent the same way will reach from 40 to 140*s.* the answer.

The Use in Broad Measure.

If a board be 9 inches broad, and 19 feet long, what is the content in superficial square feet? Extend from 12, the centre of foot measure, to 9 downwards, and that extent the same way will reach from 89 to 14 and $\frac{1}{4}$.

In Timber Measure.

A piece of timber 24 inches square, and 8 feet long, what is the content in solid feet? Extend from 12, the centre, to 24 upwards, and that extent twice the same way will reach from 8 to 32 feet, the content.

Brick Work.

How many rods of work are there in 4085 feet? Extend from 272 downwards to 2, and that extent the same way from 4085, will reach 15 rods, the answer.

Coggeshall's Sliding Rule.

This rule is framed 3 ways: sliding by one another as the Glazier's rule; sliding on one side of a two-feet joint-rule; one part sliding on the other, in a foot of length; the back part being flat, on which are sundry lines and scales.

Upon the aforesaid sliding side of the rule, are four lines of numbers, three are double lines, and one a single line of numbers, marked with A B C and D; the three marked A B and C, are called double lines of numbers, and figured 1, 2, 3, 4, 5, 6, 7, 8, 9. Then 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10, at the end.—That marked D is the single line of numbers, and figured 4, 5, 6, 7, 8, 9, 10, 20, 30, and at the end 40, even with and under 10, in the double line next to it; and that is called the girt-line, and so marked in the figure.

The figures on the three double lines of numbers, may be increased or decreased at pleasure; thus, 1 at the beginning may

be called 10, 100, or 1000; and 2 into 20, 200, or 2000; so that when one at the beginning is 10, then one in the middle is 100, and 10 at the end is 1000; but if 1 at the beginning is accounted for one, then 1 in the middle is 10, and 10 at the end is 100.

And as the figures are altered, so must the strokes or divisions between them be altered in their value, according to the number of parts they are divided into; as thus, from 1 to 2, it is divided into 10 parts, and each tenth is divided into 5 parts; and from 2 to 3, it is divided into 10 parts, and each tenth into 2 parts, and so on from 3 to 5; then from 5 to 6 it is divided into 10 parts only; and so on unto 1 in the middle of the rule, or the end of the first part of the double line of numbers. The second part of the double line is divided like the first.

The girt-line, marked D, is divided from 4 to 5 into 10 parts, and each tenth into 4 parts, and so on from 5 to 10; and then from 10 to 20 it is divided into 10 parts; and each tenth into 4 parts; and so on all the way from 20 to 40 at the end, which is right against 10 at the end of the double line of numbers.

The lines on the back-slide of this rule, that slide on one side, are these, viz. a line of the inch measure from 1 to 12, each divided into halves, quarters, and half-quarters; another line of inch measure from 1 to 12, each divided into 12 equal parts, and a line of foot measure, being 1 foot divided into 100 equal parts, and figured 10, 20, 30, 40, 50, 60, 70, 80, 90, and 100, even with 12 on inch measure.

And the back-slide of the sliding piece is divided into inches, halves, quarters, and half quarters, and figured from 12 to 24, so that it may slide out to 2 feet, to measure the length of a tree, or any thing else you have occasion to measure.

The Use of the Double Scales.

Example 1. Suppose there is a geometrical square, whose sides are $3\frac{1}{2}$ feet each: set one foot on the line B, to $3\frac{1}{2}$ on the line A, and then against $3\frac{1}{2}$ on the line B, is $12\frac{1}{4}$ feet on the line A, which is the content of such a square.

2. Suppose the side of a rhombus be 8 feet $6\frac{1}{4}$ inches, and the breadth of the line A B 8 feet $4\frac{1}{2}$ inches, what is the content? Set one foot on the line B, to 8 feet $\frac{52}{100}$ on the line A, then again 8 feet $\frac{52}{100}$ on the line B, is 72 feet $\frac{10}{100}$ parts of a foot on the line A; and to know the value of the decimal, or part of the foot, look for $\frac{10}{100}$ on the rule, and you will find against it $4\frac{1}{4}$ inches; so that the content of this rhombus is 72 feet $4\frac{1}{4}$ inches.

3. Suppose the length of a rhomboides to be 17 feet $\frac{2}{3}$, or 17 $\frac{25}{100}$, and the breadth 8 feet 7, or 8 $\frac{52}{100}$, what is the content? Set one foot on the line B, to 17,25 on the line A, then again 8,58 on the line B, is 148 feet on the line A. The figure hath been represented before, and operated arithmetically, therefore it is here unnecessary.

ASTRONOMY.

4. Let the base of a triangle be 4 feet $1\frac{3}{4}$ inch, and the perpendicular 2 feet $1\frac{3}{4}$ inch: the half of the one is 2 feet 7 parts, and of the other 1 foot 7 parts. Set 1 on the line B to 4,15 on the line A: then against 1,07 half the perpendicular on the line B, is 4 feet and almost $\frac{1}{2}$ for the content. Or, if you set 1 on the line B, to 1,07 on the line A, against 4,15 on the line B, is 4 and almost $\frac{1}{2}$ foot on the line A.

5. If you set 1 on the line B, to 4,1 on the line A, then against 2,25 on the line B, is 8 feet $\frac{9}{10}$ (which is about 11 inches) on the line A, the half whereof is 4 feet $5\frac{1}{2}$ inches, which is the content of the triangle.

GEOGRAPHY.

THE science which treats of the disposition and assemblage of all parts of the universe, and the relation they have to each other, is called Cosmography, that is, a description of the world. And, as the universe is represented by the celestial and terrestrial globes, it follows from hence that Cosmography has two principal parts: namely, Astronomy, that takes notice of the heavenly bodies and their motions; and Geography, which is a description of the earth. The latter is our principal object; but as the study of the sphere ought certainly to precede that of Geography, it will be proper to explain some particulars relating to the former, before we proceed any farther.

Of ASTRONOMY.

When the shades of the night have spread their vail over the plains, the firmament manifests to our view its grandeur and its riches. The sparkling points with which it is studded, are so many suns suspended by the Almighty in the immensity of space, for the worlds which roll round them.

The assemblage of these vast bodies is divided into different systems, the number of which probably surpasses the grains of sand which the sea casts on its shores.

Each system has at its centre a star, or sun, which shines by its own native light: and round which several orders of opaque globes revolve; reflecting with more or less brilliancy the light they borrow from it, and which renders them visible.

What an august, what an amazing conception, does this give of the works of the Creator! thousands of thousands of suns multiplied without end, and ranged all around us at immense distances from each other; attended by ten thousand times ten thousand worlds, all in rapid motion, yet calm, regular, and harmonious, invariably keeping the paths prescribed them; and these worlds

doubtless peopled with millions of beings, formed for endless progression in perfection and felicity!

Those stars which appear to wander among the heavenly host, are the planets. The primary or principal ones have the sun for the common centre of their periodical revolutions; while the others, or secondary ones, which are called satellites or moons, move round their primaries, accompanying them in their annual orbits.

Our Earth has one satellite or moon, Jupiter four, Saturn seven, and Herschel six. Saturn has besides a luminous and beautiful ring.

We know that our solar system consists of twenty-seven planetary bodies; but we are not certain that there are not more. The number known has been considerably augmented since the invention of telescopes; and by more perfect instruments, and more accurate observers, may perhaps be further increased.

Modern astronomy has not only thus shewn us new planets; but has also to our senses enlarged the boundaries of the solar system. The comets, which, from their fallacious appearance, their tails, their beard, the diversity of their directions, and their sudden appearance and disappearance, were anciently considered as meteors, are found to be a species of planetary bodies: their long tracks are now calculated by astronomers; who can foretel their periodical return, determine their place, and account for their irregularities. Many of these bodies at present revolve round the sun; though the orbits which they trace round him are so extensive, that centuries are necessary for them to complete a single revolution.

In short, from modern astronomy we learn that the stars are innumerable; and that the constellations, in which the ancients reckoned but a few, are known to contain thousands. The heavens, as known to the philosophers Thales and Hipparchus, were very scanty, when compared to the state in which they are shewn by later astronomers.

The diameter of the orbit which our earth describes, is more than a hundred and ninety millions of miles; yet this vast extent almost vanishes into nothing, and becomes a mere point, when the astronomer uses it as a measure to ascertain the distance of the fixed stars. What then must be the real bulk of these luminaries, which are perceptible by us at such an immense distance! The sun is about a million times greater than the earth, and more than five hundred times greater than all the planets taken together; and if the stars are suns, as we have every reason to suppose, they undoubtedly equal or exceed it in size.

Proud and ignorant mortal! lift up now thine eyes to heaven, and say, if one of those luminaries which adorn the starry heavens should be taken away, would thy nights become darker? Think not then that the stars are made for thee; that it is for

thee alone that the firmament glitters with effulgent brightness. Feeble mortal! thou wast not the sole object of the liberal bounties of the Creator, when he appointed Sirius, and encompassed it with worlds.

While the planets perform their periodical revolutions round the sun, by which the course of their year is regulated, they turn round their own centres, by which they obtain the alternate succession of day and night.

But by what means are these vast bodies suspended in the immensity of space? What secret power retains them in their orbits, and enables them to circulate with so much regularity and harmony? Gravity, or attraction, is the powerful agent, the universal principle, of this equilibrium, and of these motions. It penetrates all bodies. By this power, they tend towards each other in a proportion relative to their bulk. Thus the planets tend toward the centre of the system; into which they would soon have been precipitated, if the Creator, when he formed them, had not impressed upon them a projectile or centrifugal force, which continually keeps them at a proper distance from us.

The planets, by obeying at the same instant both these motions, describe a curve. This curve is an oval of different eccentricities, according to the combinations of the two active powers.

Thus the same force which determines the fall of a stone, is the ruling principle of the heavenly motions. Wonderful mechanism! the simplicity and energy of which gives us unceasing tokens of the profound wisdom of the Author.

The Sun is an immense ball or globe, and is placed in or near the common centre of the orbits of all the planets and comets. He turns round his axis in 25 days, 14 hours, as is evident by the motions of the maculæ seen on his surface. His diameter is computed to be 883,210 miles. The hourly motion of his equator is 4570 miles. He is more than a million of times larger than the Earth.

Mercury is the nearest planet to the Sun, and performs a journey round him in 87 days, 23 hours, and 15 minutes, nearly, of our time; which is the length of Mercury's year. As this planet is seldom seen, and as no spots appear on its disk or surface, the time of his rotation on his axis, or the length of his days and nights, is at present unknown to us. His distance from the Sun is computed to be 37,000,000 English miles, and his diameter 3222 miles. In his course round the Sun he moves at the rate of 110,000 miles every hour. His proportion of light and heat is almost seven times as great as ours; and, consequently, the Sun appears to the inhabitants of Mercury seven times as large as to the inhabitants of the Earth. The eccentricity of his orbit is 6,720,000 miles. The hourly motion of his equator is unknown. Mercury, when viewed at different times, appears to us with all the various phases of the Moon; save only that he never appears

quite full, because his enlightened side is never turned directly towards us, but when he is so near the Sun as to be lost to our sight in his beams.

Venus is computed to be 68,000,000 miles from the Sun; and by moving 76,000 miles every hour in her orbit, she performs a revolution round him in 224 days, 16 hours, and 42 minutes, of our reckoning, nearly. She turns round her axis, according to Mr. Schroeter, in about 23h. 21m. her year containing $230\frac{10}{21}$ of such days. Venus's diameter is 7964 miles.

Venus is our morning and evening star by turns: for, when she appears west of the Sun, she rises before him in the morning, and is denominated The Morning Star; but when she appears east of him, she shines in the evening after he sets, and is then called The Evening Star; being 290 days an evening star, and 290 days a morning star, alternately. To us she appears, through a telescope, in all the various shapes of the Moon. The artificial day, *i. e.* the time between the Sun's rising and setting, at each of Venus's poles, is as long as 112 natural days and a half of our time. The eccentricity of Venus's orbit is 413,000 miles.

The Earth. This is the next planet in the solar system. Its distance from the Sun is 95,000,000 of miles, and it journeys round him, from any equinox or solstice, in 365 days, 5 hours, 49 minutes, to the same again: but from any fixed star, in 365 days, 6 hours, and 9 minutes; the former being the length of the tropical year, and the latter that of the sidereal year. It travels about 68,000 miles every hour; which motion, though 120 times swifter than a cannon ball in its greatest velocity, is little more than half as swift as Mercury in his orbit. The diameter of the Earth is 7970 miles; and, by turning round its axis every 23 hours, 56 minutes, and 4 seconds, from west to east, it causes an apparent diurnal motion of all the heavenly bodies from east to west. By this rapid motion of the earth on its axis, the inhabitants about the equator are carried 1042 miles every hour, while those on the parallel of London are carried only about 580, besides the 68,000 miles by the annual motion above mentioned, which is common to all places on the surface of the Earth.

The Moon is not a planet, but an attendant satellite on the Earth, making its revolution round her in 27 days, 7 hours, 43 minutes, and $4\frac{3}{5}$ seconds. She performs her synodical revolution in 29 days, 12 hours, 44 minutes, and 3 seconds. Supposing her mean distance from the Earth to be unity, her eccentricity is 0,0547. She moves at the rate of 2299 miles every hour in her orbit, besides the 95,000,000 miles with the Earth every year. Her mean distance from the Earth is 240,000 miles, and her diameter about 2200. The place of her apogee moves through the 12 signs in 3231 days, 8 hours, 34 minutes, and $57\frac{1}{2}$ seconds; and that of her nodes, in 6798 days, 4 hours, 52 minutes, $52\frac{1}{3}$ seconds.

The Moon is an opaque globe like the Earth, and shines not by her own light, but by reflecting that of the Sun; consequently, during the time which that half of her which is turned toward the Sun is enlightened, the other half must be dark and invisible. Hence she disappears when she comes between us and the Sun; because her dark side is then towards us, and her illumined one toward the Sun. As she advances forward, we, by degrees, see her enlightened side, which increases more and more to our view till she be found in opposition to the Sun, when her whole enlightened side is toward the Earth, and she appears with a round illumined orb, which we call the Full Moon; her dark side being then turned away from the Earth. From the full she appears to decrease gradually as she goes through the other half of her course; shewing less and less of her enlightened side every day, till her next change or conjunction with the Sun, and then she disappears as before. This continual change of the phases of the Moon, plainly demonstrates that she shines not by her own light; for if she did, being globular, she would always appear to us with a round full orb like the Sun.

Mars is the next planet in the system, being the first above the orbit of the Earth. His distance from the Sun is computed to be 144 millions of miles. He moves at the rate of 55,000 miles every hour, and goes round the Sun in 686 days, 22 hours, 18 minutes, and 27¼ seconds, which space constitutes the length of his year. His rotation round his axis is performed in 24 hours, 40 minutes nearly, and consequently his year consists of 667¾ of his days. His diameter is 5340 miles, and supposing the distance of the Earth from the Sun to be divided into 100,000 parts, the eccentricity of Mars is 14,208 of those parts. The place of his aphelion is in 2 degrees and 27 minutes of Virgo, and the place of his ascending node in 18 degrees and 13 minutes of Taurus. His density is $\frac{7}{10}$ of the Earth's, and his light and heat $\frac{3}{10}$.

As this planet is not more than three-tenths of the size of our Earth, if there be any moon attendant on him, it must of necessity be very small; but no satellite has been discovered by any of our astronomers. He has a red and fiery appearance; and, by his appulses to some of the fixed stars, seems to be encompassed by a very gross atmosphere. He appears sometimes gibbous, but never horned; which plainly indicates that his orbit includes that of the Earth within it; and also that he shines not by his own, but by a borrowed light.

The planet Jupiter is the next in order, and is the largest of all the planets. His distance from the Sun is 494,000,000 miles, and he moves at the rate of more than 25,000 miles every hour. He completes his annual period in 4332 days, 8 hours, 58 minutes, and 27 seconds, of our time. His diameter is 90,000 miles, and he is 1479 times bigger than the Earth. Jupiter revolves round

his axis, according to Mr. Schroeter, in 9 hours, 55 minutes, $36\frac{3}{6}$ seconds; therefore his year must consist of $10{,}475\frac{33}{55}$ days according to his annual revolution above specified. By this prodigiously quick rotation the inhabitants of his equator must be carried 25,626 miles per hour. The difference between the equatorial and polar diameter of Jupiter is as 13 to 12, so that his poles are more than 3000 miles nearer his centre than the equator is. His orbit is 1 degree 20 minutes inclined to the ecliptic. The place of his aphelion is in 11 degrees 19 minutes of Libra, and the place of his ascending node 9 degrees 11 minutes of Cancer. The eccentricity of his orbit is $\frac{1}{16}$ of his mean distance from the Sun.

Jupiter is surrounded by faint substances, which astronomers have denominated Belts, and in which so many changes appear, that they have been supposed to be clouds by many writers; for some of them have been first interrupted and broken, and then have vanished entirely. They have sometimes been observed of different breadths, and afterwards have appeared of the same breadth. Large and various spots have been seen on these belts; and when those parts of the belts vanish, the spots also disappear.

Jupiter has four Moons, (some of which are larger, and some less, than our Earth,) which revolve about him; so that there is scarcely any part of this huge planet but what is, during the whole night, enlightened by one or more of these moons, except his poles, whence only those moons, which are at the greatest distance from the planet's centre, can be seen, and where, indeed, light is not so much wanted, because the Sun constantly circulates in or near the horizon.

The revolutions of Jupiter's satellites are found out from their conjunctions with that planet; after the same manner as those of the primary planets are discovered from their oppositions to the Sun. By the latest and most accurate observations, the periodical times and distances of these satellites, and the angles under which their orbits are seen from the earth, at its mean distance from Jupiter, are as follow:

Satellites.	Periodic Times.	Distances in Semidiameters.	Distances in Miles.	Angles of Orbits.
1	1*d*. 18*h*. 27*m*. 33*s*.	$5\frac{9}{10}$	266,000	3*m*. 55*s*.
2	3 13 13 42	$9\frac{1}{2}$	423,000	6 14
3	7 3 42 33	$15\frac{1}{9}$	676,000	9 58
4	16 16 32 8	$26\frac{6}{10}$	1,189,000	17 30

Jupiter's three nearest moons fall into his shadow, and are eclipsed in every revolution, but the orbit of the fourth is so much inclined, that it passes by its opposition to Jupiter with

out falling into its shadow, two years in every six. By the eclipses of these satellites, Astronomers have discovered that the light of the sun not only takes up eight minutes of time in coming to us, but they have also determined the longitudes of places on this Earth, with greater certainty and facility than by any other method yet known.

Saturn, formerly thought to be the most remote planet in the system, performs his revolution round the Sun in 10,759 days, 7 hours, 21 minutes, and 50 seconds, at the mean distance of 908 millions of miles from his centre. His diameter is about 77,950 miles; and his rotation round his axis is performed in 10 hours, 16 minutes, and $\frac{4}{10}$'s of a second. His aphelion is in 11 minutes of Capricorn, and his north node in 21 degrees, 58 minutes, of Cancer. His proportion of light and heat is $\frac{1}{90}$ of the Earth's; and his bulk 1030 times as big. Supposing the Earth's distance from the Sun to be divided into 100 thousand parts, the eccentricity of Saturn is 53,210 of those parts. He is encompassed, according to Dr. Herschel, with two eccentric rings, situated in one plane, which is probably not much inclined to the equator of the planet. The distance between the two rings is computed to be about 2839 miles. Seven Satellites, or moons, move round him as a common centre, in different periods of time, according to their respective distances from him. The periodical revolutions and distances of these satellites from the body of Saturn, expressed in semidiameters of that planet, and in miles, are as follow:

Satellites.	Periodic Times.	Distances in		Diameters of Orbits.
		Semidiameters.	Miles.	
1	1*d.* 21*h.* 18*m.* 27*s.*	$4\frac{3}{8}$	170,000	1*m.* 27*s.*
2	2 17 44 22	$5\frac{1}{2}$	217,000	1 52
3	4 12 25 12	8	303,000	2 36
4	15 22 41 13	18	704,000	6 18
5	79 7 48 0	54	2,050,000	17 4
6	1 8 53 9	$3\frac{3}{9}$	135,000	1 14
7	0 22 40 46	$2\frac{5}{6}$	107,000	0 57

Mr. Cassini places the nodes of the four first satellites in 22 degrees of Virgo upon the orbit of Saturn, and 21 degrees of Virgo upon the ecliptic. The node of the fifth satellite is placed by Mr. de la Lande in 27 minutes of Virgo. There is reason to believe that all the satellites, both of Jupiter and Saturn, revolve about their axis; for the satellites of the former appear at different times to be of very different magnitudes and brightness.—The fifth satellite of Saturn was observed by Mr. Cassini for several years, as it went through the eastern part of its orbit, to

appear less and less, till it became invisible; and in the western part to increase again. These phænomena can scarcely be accounted for, but by supposing some parts of their surfaces to be unfit to reflect light; and therefore when such parts are turned towards the Earth, they appear to grow less or to disappear. As the same appearances of this satellite returned again when it came again to the same part of its orbit, it affords an argument that the time of the rotation about its axis is the same with the time of its revolution about its primary, a circumstance similar to the case of the Moon and Earth.

Such was the planetary system: but Dr. Herschel, to whom the astronomical world is greatly indebted, has added a seventh primary planet, which he has dignified with the name of the Georgium Sidus, in honour of his late Majesty King George III. He first observed it on March 13, 1781, near the foot of Castor, and his attention was drawn by its steady light. On applying higher magnifying powers, it appeared manifestly to increase in diameter, and two days after he found that its place was changed, which induced him to take it for a comet. It was not long, however, before it was known, by the English astronomers especially, to be a planet. It is still higher in the system than Saturn, being 1,800,000,000 miles from the Sun's centre; and performs a revolution round the Sun in 83 years, 140 days, 8 hours, of our time, which constitutes its year; consequently its motion in its orbit is at the rate of about 7000 miles per hour. Its apparent diameter subtends an angle of no more than 4 seconds to an observer on the Earth, but its real diameter is above 35.000 miles; and, therefore, it is about 90 times as large as our Earth. The eccentricity of his orbit is 74,404,000 miles. Its proportion of light and heat, compared to those of our Earth, is as .003 to 1, nearly. It contains, in solidity, 20,976,679,225,000 cubic miles. As no spots have yet been discovered on its surface, the position of its axis, and the length of its day and night, are not known. The inclination of its orbit is 46 minutes and 25 seconds, his aphelion (anno 1805) is in 16 degrees 38 minutes of Pisces, and north node in 12 degrees and 52 minutes of Gemini; the annual motion of the former being $53\frac{6}{25}$ seconds, and of the latter $12\frac{1}{2}$ seconds.

On account of the immense distance of the Georgium Sidus from the source of light and heat to all the bodies in our system, it is highly probable that several satellites, or moons, revolve round it. The high powers of Dr. Herschel's telescopes have enabled him to discover six already; and it is not unlikely but there are others which he has not yet seen.

To a good eye, unassisted by a telescope, this planet appears like a faint star of the fifth magnitude; and it cannot be readily distinguished from a fixed star with a less magnifying power than 200 times.

There are two other planets lately discovered. The first of these, called Ceres, was discovered on the first day of the present century, or the first of January, 1801, by Mr. Piazzi, astronomer at Palermo, in Sicily. It moves in an orbit between Mars and Jupiter; is a very small planet, apparent through the telescope as a star of the 8th magnitude. Its apparent diameter about $\frac{1}{4}m.$ and real diameter 200 miles; other elements as follow:

Place of the ascending node	2*s.*	20*deg.*	58*m.*
Inclination of orbit - - - -	0	40	47
Place of aphelion - - - - -	2	9	0

Eccentricity of orbit 0,0364. Greater semi-axis 23 times the Earth's distance. Periodic time 4,13 years.

The second was discovered March 28, 1802, by Dr. Olbert, of Bremen, who has named it Pallas. It is a very small planet, of about 140 miles in diameter; moves between Mars and Ceres at a distance of about $2\frac{1}{2}$ of the Earth's distance, and performs its revolution in about 3 years.

The Comets, which are large solid opaque bodies, of spherical forms, have long transparent trains or tails, issuing from those sides which are turned from the Sun. These bodies perform revolutions round the Sun invery elliptical orbits. Above one hundred of these have been observed; and one of them is known to be 575 years in performing its course in its orbit. The figures of Comets are observed to be very different; for some of them throw forth beams like hair all round them, and are, therefore, called Hairy Comets. Others have a long beard, or fiery tail, and are called Bearded Comets. Their magnitudes are various; and many which have neither beams like hair, nor long transparent tails, appear no bigger than stars of the first magnitude. Most of the Comets have a dark and dense atmosphere surrounding their bodies, which greatly weakens and blunts the rays of the Sun; but within appears the nucleus or solid body of the Comet, which, when the clouds are dispersed, gives a splendid light.

Comets differ from planets in these particulars, viz. they move in various directions, some the same way that the planets do, and others the contrary way; neither are their motions confined within the zodiac, their orbits admitting of any inclination to the ecliptic whatever. The eccentricity of their orbits is so very great, that some of the comets perform the greatest part of their motions almost in right lines, tending, in their approach to the Sun, nearly in a direct line towards him; after which they pass him; and when they leave him, march off in a similar manner till they are out of sight. As they approach the Sun their motions become proportionably swifter; for they describe equal areas in equal times about his centre, as the planets do: hence it is, that when they are in their perihelia, their motions are immensely swifter than when they are in their aphelia.

The Comets belonging to our system move in all kinds of directions. All those which have been observed have moved through the ethereal regions and orbits of the planets, without suffering the least resistance in their motions: this plainly demonstrates and proves, that the planets do not move in solid orbs, as some philosophers have imagined.

Of the Fixed Stars.

The Fixed Stars are those which always keep the same distance with regard to each other, their apparent diurnal revolutions being solely caused by the Earth's turning on its own axis. As to the distances of these stars, they are scarcely within the reach of our best methods to determine. The nearest, however, to our Earth, is supposed to be at the immense distance of 32,000,000,000,000 miles, which is so far, that a cannon ball would not reach it in 7,000,000 years, even supposing it to fly with its greatest velocity. The most learned of our astronomers imagine, that the Fixed Stars are Suns, and that each of them is encompassed with a complete system of planets. That these stars are suns seems evident, because they shine with their own native light; and as to their magnitudes, they are only diminished in appearance by their amazing distance from us; and so vivid is their light, and so small their apparent diameters when viewed through telescopes, that they appear as if they shined by their own native light as our Sun does. If the Sun were to be viewed from one of the nearest Fixed Stars, it would have the appearance of a star of the first magnitude. These stars, on account of their various magnitudes, have been divided into several classes: thus, those which appear largest are called Stars of the First Magnitude; the next to them in lustre, Stars of the Second Magnitude; and so on to those which are of the Sixth Magnitude; and these are the smallest that can be seen by the naked eye. This division of the Fixed Stars into classes, was made long before the invention of the telescopic tubes; and those stars which cannot be seen without the assistance of these instruments, are known by the appellation of Telescopic Stars.

Of the Milky Way.

The Galaxy, Via Lactea, or Milky Way, is a remarkable whitish track round the heavens, obvious to the naked eye. The cause of this white appearance was supposed, by some of the ancients, to be owing to a certain exhalation hanging in the air; but it has since been found, by the use of telescopes, to have been caused by a prodigious number of very small stars, which are situated in that part of the heavens where the Milky Way appears. This track shews itself in some places with a double path, but in most with a single one.

Of the ECLIPSES *of the* SUN *and* MOON.

Any opaque body, that is exposed to the light of the Sun, will cast a shadow behind it. This shadow is a space deprived of light, into which if another body comes, it cannot be seen for want of light; and the body thus falling within the dark shadow is said to be *eclipsed.* The Earth and Moon being opaque bodies, and deriving their light from the Sun, do each of them cast a shadow behind, or towards the hemisphere opposed to the Sun. Now when either the Moon or the Earth passes through the other's shadow, it is thereby deprived of illumination from the Sun, and becomes invisible to a spectator on the body from whence the shadow comes; and such spectator will observe an eclipse of the body which is passing through the shadow; while a spectator on the body which passes through the shadow, will observe an eclipse of the Sun, being deprived of his light. Hence there must be three bodies concerned in an eclipse; 1. the luminous body; 2. the opaque body that cast the shadow; and 3. the body involved in the shadow.

An eclipse of the Sun can only happen at the change of the Moon, and an eclipse of the Moon at the full: but the reason that there is not an eclipse at every new and full Moon is owing to the inclination of the Moon's orbit to the plane of the ecliptic, which amounts, in eclipses, to 5 degrees, and $17\frac{1}{3}$ minutes, crossing the Earth's orbit only in two points, called the nodes, that by which the Moon ascends northward of the ecliptic being called the ascending, and the opposite one the descending node. Therefore if the Sun, at the time of new Moon, be within 18 degrees of either node, he will be eclipsed; but on the contrary, if the Moon, at the time of full Moon, be within 12 degrees, she will be eclipsed. Now, since the limits of an eclipse of the Sun or Moon, are so small a portion of the ecliptic, it is not difficult to conceive why there are so few eclipses in comparison to the number of new and full Moons in the year. The greatest number of eclipses that can possibly happen in the course of a year are seven, in which case five of them will be solar ones; and the fewest number are two, both also of the Sun; there are, however, commonly only four. When, in an eclipse of the Sun or Moon, the body is wholly obscured, it is called a total eclipse; but if in part only, a partial one. When the Moon is exactly in either node at the true time of the full, the eclipse is said to be central, because the centres of the Moon and Earth's shadow are coincident. Should the Sun, at the time of new Moon, be exactly in either of the nodes, the centre of the Moon's shadow will directly cross the centre of the Earth's disk, as seen from the Moon. If, in an eclipse of the Sun, a ring of light be observed round his body, it is called an annular eclipse; if the annulus, or ring, be

of an equal breadth round the Sun's body, it is denominated a central annular eclipse.

To know the cause of a solar eclipse being visible in one part of the globe and not in another, though at the same time above the horizon of both places, the reader must observe, that the Moon's dark shadow can cover only a spot on the Earth's surface of about 180 English miles broad, when the Moon's diameter appears largest, and the Sun's least; and the total darkness can extend no farther than the dark shadow covers. Yet the Moon's partial shadow or penumbra may cover a circular space 4900 miles in diameter, within all which the Sun is more or less eclipsed, as the places are less or more distant from the centre of the penumbra. When the Moon changes exactly in the node, the penumbra is circular on the Earth at the middle of the general eclipse; because at that time it falls perpendicularly on the Earth's surface: but at every other moment it falls obliquely, and will therefore be elliptical; and the more so, as the time is longer before or after the middle of the eclipse; and then much greater portions of the Earth's surface are involved in the penumbra. When the penumbra first touches the Earth, the general eclipse begins; when it leaves the Earth, the eclipse ends; from the beginning to the end the Sun appears eclipsed in some part of the Earth or other. When the penumbra touches any place, the eclipse begins at that place, and ends when the penumbra leaves it. When the Moon changes in the node, the penumbra goes over the centre of the Earth's disk, as seen from the Moon; and consequently, by describing the longest line possible on the Earth, the Sun's general eclipse continues the longest upon it; namely, at a mean rate, 5*h*. 50*m*. more, if the Moon be at her greatest distance from the Earth, because she then moves slowest; less if she be at her least distance, because of her quicker motion, as observed before in eclipses of the Moon.

With respect to the periods of eclipses, if the places of the Moon's nodes were fixed, eclipses would always happen nearly at the same time of the year; but as they have a motion of about 3′ 11″ every day backwards, or contrary to the order of the signs, the succeeding eclipse must recede likewise; and in one revolution of the nodes, which is completed in 18 years and 225 days, there would always be a regular period of eclipses, if any complete number of lunations were finished without a fraction. But this never happens, for if both the Sun and Moon should start from a line of conjunction with either of the nodes in any point of the ecliptic, the Sun would perform 18 annual revolutions and 222 degrees over and above, and the Moon 230 lunations and 85 degrees of the 231, by the time the node came round to the same point of the ecliptic again; so that the Sun would then be 138 degrees from the node, and the Moon 85 degrees from the Sun. But in 223 mean lunations, after the

Sun, Moon and nodes, have been once in a line of conjunction, they return so nearly to the same state again, as that the same node, which was in conjunction with the Sun and Moon at the beginning of the first of these lunations, will be within 28*m*. 12*s*. of a degree of a line of conjunction with the Sun and Moon again, when the last of these lunations is completed. And therefore in that time there will be a regular period of eclipses, or return of the same eclipse, for many ages. In this period, which is called the Chaldean Saros, there are 18 Julian years, 11d. 7h. 43m. 20s. when the last day of February in leap-years is four times included; but, when it is five times included, the period consists of only 18 years, 10d. 7h. 43m. 20s. Consequently, if to the mean time of any eclipse, either of the Sun or Moon, we add 18 Julian years, 11d. 7h. 43m. 20s. when the last day of February in leap-years comes in four times, or a day less when it comes in five times, we shall have the mean time of the return of the same eclipse. The greatest possible duration of a lunar eclipse is 3h. 57m. 6s. and of the Moon's shadow upon the Earth's disk about 5h. 50m.

Of Refraction.

As one of the principal objects of astronomy is to ascertain the situation of the several heavenly bodies, it is necessary, as a first step, to understand the causes which occasion a false appearance of the place of those objects, and make us suppose them in a different situation from that which they really have. Among these causes Refraction is to be reckoned. By this term is meant the bending of the rays of light as they pass out of one medium into another. The Earth is every where surrounded by an heterogeneous fluid, a mixture of air, vapour, and terrestrial exhalations, that extend to the regions of the sky. The rays of light from the Sun, Moon, and Stars, in passing to a spectator upon Earth, come through this medium, and are so refracted in their passages through it, that their apparent altitude is greater than their true altitude.

Refraction is greatest at the horizon, and in this climate it is found to be about 33 minutes. In climates nearer to the equator, where the air is pure, the refraction is less; and, in the colder climates, it increases exceedingly, and is a happy provision for lengthening the appearance of the light at those regions so remote from the Sun. Gassendus relates, that some Hollanders, who wintered in Nova Zembla, in latitude 75 deg. were surprised with the sight of the Sun seventeen days before they expected him in the horizon. This difference was owing to the refraction of the atmosphere in that latitude. To the same cause, together with the peculiar obliquity of the Moon's orbit to the ecliptic, some of these very northern regions are indebted for an uninterrupted light from the Moon, much more than half the month, and

sometimes almost as long as it is capable of affording any ligh to other parts of the Earth.

Through this refraction we are favoured with the sight of the Sun about three minutes and a quarter before it rises above the horizon, and also as much every evening after it sets below it, which in one year amounts to more than forty hours. And it is to this property that we are also indebted for that enjoyment of light from the Sun when he is below the horizon, which produces the phenomena of the crepusculum, or morning and evening twilight. The Sun's rays, in falling upon the higher part of the atmosphere, are reflected back to our eyes, and form a faint light, which gradually augments till it becomes day. It is owing to this, that the Sun illuminates the whole hemisphere at once: deprived of the atmosphere, he would have yielded no light but when our eyes were directed towards him; and, even when he was in meridian splendour, the heavens would have appeared dark, and as full of stars as on a fine winter's night. The rays of light would have come to us in straight lines, the appearance and disappearance of the Sun would have been instantaneous; we should have had a sudden transition from the brightest sun-shine to the most profound darkness, and from thick darkness to a blaze of light. Thus, by refraction, we are prepared gradually for the light of the Sun, the duration of its light is prolonged, and the shades of darkness softened.

Stars in the zenith are not subject to any refraction; those in the horizon have the greatest of all; from the horizon, the refraction continually decreases to the zenith. All which follows from hence, that, in the first case, the rays are perpendicular to the medium; in the second, their obliquity is the greatest, and they pass through the largest space of the lower and denser part of the air, and through the thickest vapours; and, in the third, the obliquity is continually decreasing. The air is condensed, and consequently refraction is increased, by cold; for which reason it is greater in cold countries than in hot ones. It is also greater in cold weather than in hot, in the same country; and in the morning refraction is greater than that of the evening, because the air is rarefied by the heat of the Sun in the day, and condensed by the coldness of the night. Refraction is also subject to some small variation at the same time of the day in the finest weather.

The horizontal refraction, being the greatest, is the cause that the Sun and Moon appear of an oval form at their rising and setting; for the lower edge of each being more refracted than the upper edge, the perpendicular diameter is shortened, and the under edge appears more flatted. Hence also, if we take with an instrument the distance of two stars when they are in the same vertical, and near the horizon, we shall find it considerably less than if we measure it when they are both at such a height as to suffer little or no refraction; because the lower star is more ele-

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vated than the higher. There is also another alteration made by refraction in the apparent distance of stars; when two stars are in the same almicanter, or parallel of declination, their apparent distance is less than the true; for, since refraction makes each of them higher in the azimuth or vertical in which they appear, it must bring them into parts of the vertical where they come nearer to each other; because all vertical circles converge and meet in the zenith.

The ingenious Mr. Simpson has completed a table of the mean refractions, which are as follow:

Apparent Altitude.	Refraction.	Apparent Altitude.	Refraction.	Apparent Altitude.	Refraction.
0°	33′ 0″	17°	2′ 50″	38°	1′ 7″
1	23 50	18	2 40	40	1 2
2	17 43	19	2 31	42	0 58
3	13 44	20	2 23	44	0 54
4	11 5	21	2 16	46	0 50
5	9 10	22	2 9	48	0 47
6	7 49	23	2 3	50	0 44
7	6 48	24	1 57	52	0 41
8	5 59	25	1 52	54	0 38
9	5 21	26	1 47	56	0 35
10	4 50	27	1 42	58	0 32
11	4 24	28	1 38	60	0 30
12	4 2	29	1 34	65	0 24
13	3 43	30	1 30	70	0 19
14	3 27	32	1 23	75	0 14
15	3 13	34	1 17	80	0 9
16	3 1	36	1 12	85	0 4½

It is evident that all observed altitudes of the heavenly bodies ought to be diminished by the numbers taken out of the foregoing table. It is also evident that the refraction diminishes the right and oblique ascensions of a star, and increases the descensions: it increases the northern declination and latitude, but decreases the southern: in the eastern part of the heavens it diminishes the longitude of a star, but in the western part of the heavens it increases the same.

Of GENERAL GEOGRAPHY.

Geography is a science of the mixed mathematics, which considers the description of the Earth and its parts, and may be taken in a twofold sense, either as universal, relating to the Earth in

general; or special, as bearing reference to any particular part of it.

The relation which Geography bears to Astronomy is well known. It is, therefore, no wonder that the ancients, with all the genius and penetration we may be inclined to allow them, should not attain to the same degree of knowledge with the moderns, when we consider, that they were not assisted by the same helps. The moderns, in the discovery of America, have opened a passage to a New World, which was entirely unknown to the ancients; and those parts of the Old World which our forefathers thought uninhabitable, have been found to be inhabited; their torrid zone has been found to be temperate, it being refreshed by showers, constant breezes, and cold nights, by the direct setting of the sun, and the interposition of the whole body of the Earth. Antipodes, which have been the subject of much controversy, are now demonstrated to be matter of fact; and the Globe itself has been compassed with less difficulty by Magellan, Drake, Anson, Cook, &c. than the Phœnicians and Greeks could have coasted the shores of the Mediterranean sea.

Of the FIGURE, *&c. of the* EARTH.

The Earth is a sphere or globe, whose surface is covered with land and water; and is therefore called the Terraqueous Globe. That the Earth is spherical or globular will appear, not only from the circular shadow it has upon the Moon, when that body happens to be eclipsed by it; but also from the appearance of the sea, and the many observations made by persons standing upon the shore, and viewing a ship departing from the port: they first lose sight of the bottom of the vessel, whilst they can still see the rigging and the flags at the tops of the masts; but as the ship recedes farther, they lose sight of those also, as if the whole were sunk into the deep. Likewise, if a ship sails towards the land, the mariners first descry the tops of steeples, trees, &c. pointing above the water; next they behold the buildings themselves; and, lastly, the shore: which can only be caused by the Earth's rotundity.

The velocity of those parts of the Earth which are situated near the equator, exceeds the velocity of those parts which are situated in higher latitudes. This being the case, the particles of the Earth near the equator have a greater force to recede from the axis than the particles in other latitudes have. Again, as water is more susceptible of being agitated by the rotation of the Earth than the land, it follows, that the waters would rise up towards the equator, and overflow all the land there, if the Earth were a perfect sphere. To prevent which, it is necessary that the convexity of the Earth should be somewhat higher at the equator than at the poles. This would produce a difference in the lengths

of the equatorial and polar diameters. From some observations which were made on pendulum clocks, fitted to beat seconds in the latitudes of London and Paris, it had been found, that their motion was slower as they approached toward the equator; and the pendulums were obliged to be shortened about a tenth part of an inch, in order to make the clocks agree with the times of the stars passing the meridian. This difference in the lengths of the pendulums appearing to the celebrated Huygens, and Newton, to be a greater quantity than could arise merely from the alterations by heat, they separately found that the Earth must be flatted at the poles; and Sir Isaac Newton has shewn, in his Principles of Natural Philosophy, that this flatness is about 17.1 miles, and that the polar diameter is to the equatorial diameter as 229 to 230.

With regard to the constituent parts of the Earth, "it seems probable," says Sir Isaac Newton, "that God in the beginning formed matter in solid, massy, hard, impenetrable, moveable particles, of such sizes and figures, and with such other properties, and in such proportion to space, as most conduced to the end for which he formed them; and that these primitive particles, being solid, are incomparably harder than any porous bodies, compounded of them, even so very hard as never to wear or break in pieces, no ordinary power being able to divide what God himself made one in the first creation. While these particles continue entire, they may compose bodies of one and the same nature and texture in all ages; but should they wear away, or break in pieces, the nature of things, depending on them, would be changed. Water and earth, composed of old worn particles and fragments of particles, would not be of the same nature and texture now with water and earth composed of entire particles in the beginning. And therefore, that nature may be lasting, the changes of corporeal things are to be placed only in the various separations and new associations and motions of these permanent particles; compound bodies being apt to break, not in the midst of solid particles, but where those particles are laid together, and only touch in a few points." Hence we may conclude, that from these primary particles all other bodies are formed, whether they be metals, stones, salts, earths, vegetables, or animals.

Of the AIR, *and its* PROPERTIES.

The Air is a thin elastic fluid which surrounds the globe of the Earth. It is by no means an easy task to ascertain the nature and origin of this fluid, it being imperceptible to all our senses except that of feeling. But, from the resistance and impression it makes we know that there is such a body, and that this body not only surrounds a particular part of the Earth, but every part of it. The Air is not only of importance to mankind in promoting many

useful arts, but is absolutely necessary to the preservation of life itself.

The Air being a universal and powerful instrument, which nature is constantly applying in all her works, the knowledge of its active properties is highly necessary. Fluidity, then, is one of the most obvious and essential properties of Air, and seems to be owing to the tenuity of its parts. That air is a fluid, we may readily conceive, because it affords an easy passage to all bodies moving in it. Air is greatly different from all other fluids, in being compressible, in its differing in density according to its height from the Earth's surface, and in being incapable of fixation, at least by itself.

Gravity is another very considerable property of Air, and may be proved from various experiments, among which one is very exact, viz. by weighing it in a balance like other heavy bodies. This may be done by exhausting all the Air, as near as possible, out of a glass flask, whose capacity is exactly known in cubic inches; hang it to the end of a nice hydrostatical balance, placing grain weights in the opposite scale, to counterbalance it. When the equilibrium is nicely obtained, lift up the valve of the flask, and the air will be heard to rush in; on which the flask will greatly preponderate. To restore the equilibrium again, it is necessary to add about eight grains for every pint the flask contains; which shews that a gallon of Air weighs about a drachm, and a bushel an ounce troy. As Air is an heterogeneous fluid, its weight varies according to its different component parts; but this variation is sufficiently shewn by the Barometer.

Elasticity, a third essential part of Air, is evident from the common experiment of a blown bladder. The elasticity of this fluid is always regulated by its density: for if Air, near the surface of the earth, be included in any vessel, without altering its density, the pressure of the included Air will be equal to the weight of the atmosphere. Hence it appears, that the more Air is compressed the greater will be its elasticity. By Mr. Boyle's observations, the difference between the most rarefied and most condensed Air is as 1 to 520,000; therefore, notwithstanding so high a degree of rarefaction and condensation, the elasticity of the Air still remains. Hence we may conclude, that Air is an unchangeably elastic moveable fluid, constantly operating in and upon all bodies, by its own peculiar vibratory motion. Heat also is found to increase the elasticity of the Air, and cold to have a quite contrary effect. The Thermometer wonderfully shews the various degrees of both.

The pressure of the Air may be attributed to the coherence of the parts of bodies. As animal life depends upon breathing, so breathing is owing to the pressure and elasticity of the Air. To the same cause may be attributed the production of fire and flame, as appears from the sudden extinction of a coal or candle in an

exhausted receiver. It is also requisite for the existence and propagation of sounds, for the germination and growth of plants, for conveying all the variety of smells, and for transmitting the rays and influence of the celestial bodies. In short, such is the generating and vivifying power of Air, that some of the ancient philosophers considered it as the first principle of all things.

Air has been found, by experiment, to act upon all bodies by its common properties of weight and elasticity, and by the peculiar virtues of the ingredients whereof it is composed. Thus, by means of a corrosive acid, it will readily dissolve iron and copper, unless those substances are well defended by oil. Even gold is not exempt from the actings of Air; for if Air be impregnated with the effluvia of aqua regia, gold will contract a rust like other bodies. So great are the properties of Air, that it will fix volatile bodies, and volatilize those which are fixed.

Of the ATMOSPHERE.

The Atmosphere, as was said of air, is that thin elastic fluid which surrounds the Earth; which revolves with it in its diurnal motion, and which likewise goes round the Sun with it every year.

As air is not of an equal density, the height of the Atmosphere cannot be exactly determined. By experiment it appears, that a column of air 73 feet high, is equal in weight to one inch of water of the same base; so that the density of air is to that of water as 1 to 864. It has also been found by experiment, that the weight of a column of air, reaching to the height of the Atmosphere, will be equal to the weight of a column of water of a similar base, and 384 inches high. Therefore, if 864 be multiplied into 384, we shall have 331,776 inches for the height of the Atmosphere, which is a little more than 5 miles: but, by this calculation, it is supposed that the air is every where of the same density as at the Earth. This, however, is not the case; for the density of air decreases with its pressure, and the higher we ascend, the more rarefied and expanded it will be; by which means the height of the Atmosphere becomes indefinite, and at last terminates in pure æther. Although no philosopher has been able to assign the real height of the Atmosphere, it nevertheless appears probable, that 45 or 50 miles is the utmost height where the density is sufficient to refract a single ray of light: and, therefore, it may be accounted the altitude of the Atmosphere, to the least sensible degree of density.

The Atmosphere is a perfect chaos of different effluvia, consisting of all kinds of corpuscles (minute particles of matter) confusedly jumbled together, and constituting one mass. Water fire, volatile salts, oils, &c. are blended together in different proportions in the Atmosphere. Hence the gravity of the Atmo-

sphere varies, according as the more light or more ponderous of these constituent parts prevail. Sometimes the atmosphere will sustain a pillar of mercury 31 inches high in the barometer; and, at other times, it will raise the mercury no higher than 28 inches. If we take the medium of 29,5 inches for the mean altitude of the mercury, a column of it, whose base is but one square inch, will weigh 15 pounds, which is equal to the pressure of the atmosphere on one square inch. If the surface of a man's body be 14,5 square feet, the pressure of air sustained by him will be 31320 pounds, or nearly 14 tons at a medium; but, when the air is lightest, it will be only 13,3 tons; and when heaviest, 14,2 tons; the difference of which shews, that we are sometimes compressed with 2464 pounds more than we are at other times.

The celebrated Ferguson, speaking of a common mistake concerning the weight of the Air, says, "Oftentimes the state of the air is such, that we feel ourselves languid and dull; which is commonly thought to be occasioned by the air's being foggy and heavy about us. But that the air is then too light is evident, from the mercury's sinking in the barometer, in which time it is generally found, that the air has not sufficient strength to bear up the vapours which compose the clouds: for, when it is otherwise, the clouds mount high, and the air is more elastic and weighty about us, by which means it balances the internal spring of the air within us, braces up our blood-vessels and nerves, and makes us brisk and lively."—Astronomy, p. 93. Edit. 1790.

In order to form an idea of the weight of the whole atmosphere upon the Earth's surface, we may proceed in the following manner: Suppose the diameter of the Earth to be 8000 miles, in round numbers, the quantity of square miles on the surface of the Earth will be 201,065,600; but as our supposition made the diameter somewhat too large, we may, in return, take the number of square miles on the surface somewhat less, and, accordingly, we shall make use of the round number 200,000,000 square miles for the space which covers the earth's surface: in one square mile there are 27,878,400 square feet; therefore, on the earth's surface we have 5,575,680,000,000,000 square feet, which being multiplied by 2660 pounds, the pressure of the atmosphere on each square foot, the result will be 14,831,308,800,000,000,000 pounds for the weight of the whole atmosphere.

Notwithstanding the innumerable conveniences we receive from the atmosphere, were it not for its refractive power, the earth would not be that beautiful scene it now appears. It is the atmosphere that makes the firmament appear lucid and bright while the sun shines; for if the earth was not surrounded by an atmosphere, only that part of the heavens in which the sun is placed would appear to shine. In such a case as this, if a spectator were to turn his back to the sun, he would behold nothing but darkness before him: and even in the day-time, during

the shining of the Sun, the least stars would be seen as plain as in the darkest night, because there would be nothing to reflect the Sun's rays to our eyes; and all the rays that do not fall upon the surface of the Earth passing by us, would either illuminate the planets and stars, or, spreading themselves out in infinite space, would never be reflected back to us. But as an Atmosphere surrounds the Earth, which is strongly illuminated by the Sun, it reflects the light back to us, and causes the whole firmament to shine with such splendour, so as to obscure the faint light of the stars, and render them invisible. If there were no Atmosphere, the Sun would shine as bright as at noon just before his setting; and the moment he got below the horizon, all that part of the Earth would be involved in darkness. The same phænomena would also attend his rising. But how inconvenient would such sudden transitions, from the greatest darkness to the greatest light, prove to the inhabitants of the Earth! This inconvenience is entirely removed by the Atmosphere: for though after the setting of the Sun we receive no direct light immediately from him, yet the all-wise Providence has so ordered it, that we enjoy his reflected light for a considerable time; so that the darkness of the night comes gradually on. In the morning also, as soon as the Sun rises within 17 deg. 30 m. of the horizon, he begins again to enlighten the Atmosphere, and to diffuse his light through the heavens; its brightness increasing by degrees, till the Sun rises, and makes a full day.

As the Atmosphere contains vapours of various kinds, by which the clouds are formed, and as it is capable of rarefaction and condensation; all the particulars of Rain, Hail, Snow, Lightning, and Thunder, may be accounted for. The watery steams arising from seas, lakes, rivers, vegetables, &c. on the surface of the Earth, are a vast quantity, amounting, no doubt, to many hundred thousands of millions of tuns of water every day.—Rain is apparently the precipitated vapours of watery clouds: thus, when various congeries of clouds are driven together by the agitation of the winds, they intermix and form one body, (in the same manner as congeries are formed by several particles uniting into one mass,) and, by that means, dissolve and condense each other into their former substance of water: the coldness of the Atmosphere is also a great means to collect, compact, and condense clouds into water; which, being considerably heavier than the air, must of necessity fall, though in the form which we call rain; the resistance of the air causing it to fall in drops.—Hail is evidently no other than drops of rain congealed into ice. This happens when, in their passage through the air, they meet with nitrous particles, which are known to contribute greatly to freezing. The reason that hail is so frequent in summer is, because during that season greater quantities of nitre are exhaled from the earth than at any other period of the year.—Snow is produced from a considerable

condensation of the vapours of the Earth, yet not to so great a degree as to be dissolved into water: by coldness in the upper regions of the Atmosphere, the particles of these condensed vapours become changed into ice; several of which adhering together, form little fleeces of a white substance, somewhat heavier than the air, and therefore descend in a gentle manner through it, being subject, by reason of its lightness, to be driven about by the various motions of the air and wind.——*Lightning and Thunder.*—Lightning is the sudden kindling of sulphureous exhalations, which are brought together by the action of winds, by heat, &c. and Thunder is the noise occasioned by the kindling of these exhalations. The distance of thunder from us may be thus estimated: As the motion of light is so very quick, that the time it takes up in coming to us from the cloud is not perceptible; and as that of sound is about 1000 feet per second; if we allow 1000 feet for every second of time that elapses between our seeing the one and hearing the other, we shall have the distance of the cloud, in feet, pretty nearly from whence the thunder comes.

Of Winds.

As the air is a fluid, its natural state is undoubtedly that of rest, which it endeavours always to keep or to retrieve by an universal equilibrium of all its parts. When this equilibrium of the Atmosphere happens to be destroyed in any part, there necessarily follows a motion of all the circumjacent air towards that part to restore it; and it is this motion of the air which philosophers have denominated Wind. With respect to that place where the equilibrium of the air is disturbed, we observe, that the Wind may blow from all points of the compass at the same time; those who live northward of that point have a North Wind, those who live southward, a South Wind, &c. but those who live on the spot where all those currents of air meet, are generally oppressed with boisterous weather, with whirlwinds and hurricanes, with rain, lightning, and thunder; for the sulphureous exhalations from the South, the torrents of nitre from the North, and the aqueous vapours from every part, being here blended together, seldom fail to produce the above-mentioned phænomena.

Wind may be produced by a variety of causes; but the most general are these two, Heat and Cold. Heat rarefies and expands the air, making it lighter in some places than it is in others; and Cold, by condensation, makes it heavier.

As the motion of the air has a greater or less velocity, the wind is stronger or weaker; and from observation it has been found, that the velocity of the wind is various, it being perceived to be from one to fifty or sixty miles per hour.

Tropical Winds.

The Tropical Winds extend to about 30 deg. North and South

of the Equator, and are of three kinds, viz. 1. The Genera Trade Winds; 2. The Monsoons; 3. The Sea and Land Breezes.

The Trade Winds blow from the north-east on the north side of the Equator, and from the south-east on the south side of the Equator, and near the Equator, almost due east; but under the Equator, and two or three degrees on each side of it, the Winds are variable, though generally east; and here it is sometimes calm for a month together.

Along the coast of Guinea, from Sierra Leone, to the island of St. Thomas under the Equator, which is above 1500 miles, the southerly and south-west Winds blow continually: for the S. E. Trade Wind, having passed the Equator, and approaching the Guinea coast within 240 or 300 miles, inclines towards the shore, and becomes S. S. E. then S. and by degrees, as it comes near the land, veers about to S. S. W. and at the land it is S. W. and sometimes W. S. W. This track is troubled with frequent calms, and violent and sudden gusts of wind, called Tornadoes, blowing from all points of the horizon.

Between the 4th and 10th degrees of North latitude, and between the longitudes of Cape de Verd, and the easternmost of the Cape de Verd Islands, is a track of sea which appears to be destined to perpetual calms, attended with terrible thunder and lightning, and such frequent and heavy rains, that this part of the sea is, by mariners, called The Rains. The cause of this seems to be, that the westerly Winds setting in on this coast, and meeting the general easterly Wind in this track, balance each other, and by that means occasion the calms; and the vapours carried thither, by each wind meeting and condensing, cause the almost constant rains.

Between 10 and 30 degrees South latitude in the Indian ocean, the Wind, about S. E. by S. is found to blow all the year in a similar manner, as in the like latitudes in the Ethiopic ocean, and during six months, from May to December, these winds reach within two degrees of the Equator; but during the other six months, from November to June, a N. W. Wind blows in the track lying between the 3d and 10th degrees of South latitude, in the meridian of the north end of Madagascar; and between the 2d and 12th degrees of South latitude, near the longitude of Sumatra and Java. In the track between Sumatra and the coast of Africa, and from the 3d degree of South latitude quite northward to the Asiatic coasts, including the Arabian sea and the gulph of Bengal, the Monsoons blow from September to April on the N. E. and from March to October on the S. W. In the former half year, the Wind is more steady and gentle, and the weather clearer, than in the latter six months; and the Wind is more strong and steady in the Arabian sea, than in the gulph of Bengal.

The Monsoons are periodical Winds, which blow six months in one direction, and six months in the opposite direction. At the change or shifting of the Monsoons are very terrible storms of wind, lightning, thunder, and rain.

The Sea and Land Breezes are periodical Winds, which blow from the land in the night, and good part of the morning, and from the sea about noon, till midnight; these do not extend more than two or three leagues from shore. On the coast of Peru, in South America, the Wind blows constantly from the south-west. Within the tropic of Cancer, in the months of April and May, are hot Winds, which blow over a long track of burning sand, from eight to eleven in the morning, and sometimes longer, when the Sea Breeze rises and refreshes the natives. Beyond the latitude of 30 degrees North and South, the Winds are variable, but oftener blow from the west than any other point. The north-east Winds are excessively cold in Europe, as the north-west are in North America. Between the tropics, the seasons are divided into wet and dry, and not into winter and summer: when the sun is vertical, it brings storms and foul weather with it, and all the flat country is overflowed; but when the Sun is on the opposite side of the Equator, then is their fair season, and their harvest. Near the Caribbee islands in the American seas, they have hurricanes usually in July and August, the Wind frequently veering and blowing in every direction.

The most dreadful of all storms is that called a Hurricane, with which the West Indies is sometimes afflicted. The author of the account of the European Settlements in America, says, it is in the rainy season, principally in the month of August, more rarely in July and September, that they are assaulted by hurricanes, the most terrible calamity to which they are subject from the climate. This destroys, at one stroke, the labours of many years, and frustrates the most exalted hopes of the planter; and often just at the moment when he thinks himself out of the reach of fortune. It is a sudden and violent storm of wind, rain, thunder, and lightning; attended with a furious swelling of the sea, and sometimes with an earthquake; in short, with every circumstance which the elements can assemble that is terrible and destructive: first they see, as a prelude to the ensuing havock, whole fields of sugar-canes whirled into the air, and scattered over the face of the country. The strongest trees of the forest are torn up by the roots, and driven about like stubble. Their windmills are swept away in a moment. Their works, the fixtures, the ponderous copper-boilers and stills, of several hundred weight, are wrenched from the ground, and battered to pieces. Their houses are no protection. The roofs are torn off at one blast, whilst the rain, which in an hour rises five feet, rushes in upon them with an irresistible violence. A dreadful proof of this severe devastation was experienced in the West India islands in October, 1780.

Of Tides.

The Tides, or the Flux and Reflux of the Sea, are that regular motion of the waters by which they rise and fall at certain equal intervals of time. The doctrine of the Tides remained in obscurity, till Sir Isaac Newton explained it by his principle of gravity and attraction. There being a principle of gravitation in all the bodies which are within the solar system, by which they mutually attract each other in proportion to the squares of their distances, it follows, that wherever the Moon becomes vertical, the Sea will be raised, which occasions the flowing of the Tide there. By the diurnal rotation of the Earth from west to east in 24 hours, the Sun apparently revolves from east to west in the same time: so, by the same rotation, the Moon apparently revolves from east to west in 24 hours 49 minutes, so as to return to the meridian she set out from. As the Sun apparently revolves round the Earth in a year, so the Moon really moves round the Earth in 29 days, 12 hours, and 44 minutes; consequently, if the Sun and Moon are both upon the meridian at any time, it will be 29 days, 12 hours, and 44 minutes, before they can be upon the same meridian again: this is called the Conjunction of the Sun and Moon. In about half that space of time, or 14 days, 18 hours, and 22 minutes, they will be upon opposite meridians: this is called the Opposition of the Sun and Moon. Now, as the Earth is attracted by the Sun, though in a much less proportion than she is attracted by the Moon, (because the Sun is at so vast a distance from the Earth,) yet when they are both upon the meridian, either in conjunction or in opposition, *i. e.* at either Full or New Moon, their joint attraction conspire to raise the Tides higher than when they act cross-ways. Hence the Tides rise higher twice in every Lunar month, and are called Spring Tides; but when the Sun and Moon acts cross-ways, or are 90 degrees asunder, the Tides are lessened in proportion to the difference of their powers of attraction, and produce Neap Tides; these happen at the first and last quarters of the Moon. The Moon being the principal cause of raising the Tides, they are always found to follow her, and consequently must be always shifting from west to east as the Moon does; so that, if it be high water at any place when the Moon is upon the meridian of that place, either at Full or New Moon, it will be about 49 minutes later on the following day before it will be high water at the same place. The Tides rise and fall regularly twice in every 24 hours and 49 minutes; so that by knowing the time of the Moon's southing at any place, and the time of high water at the Full or New Moon at that place, the time of high water on any other day at the same place may be easily found, by allowing 49 minutes later for every day since the Full or New Moon, or 24,5 minutes for every Tide. The Spring Tides are higher than ordinary twice in every year, viz. about

the vernal and autumnal equinoxes, and the Neap Tides less. these phænomena are occasioned by the Sun's being nearer to the Earth in Spring and Autumn than at any other season of the year, and, consequently, the power of attraction is stronger; for by drawing up the water when the Sun and Moon are upon the meridian to a greater height than ordinary, the water 90 degrees distant from the meridian must subside in the same proportion.

About small islands and head-lands in the middle of the ocean, the Tides rise very little. In some bays of the sea, and at the mouths of some rivers, the Tides rise from 12 to 50 feet. In the Euripus, between Negropont and Greece, it flows 12 times in 24 hours, for a fortnight every Moon. In the Caspian sea, between Persia and Russia, there are no Tides; but once in about 14 or 15 years the water rises so prodigiously high, as to overflow the flat country. In the Baltic sea, in Europe, there are no Tides.

Of Currents.

There are frequently found in the ocean Streams or Currents which, by their strength, drive ships out of their intended courses. Of these Currents there is a remarkable one between Florida and the Bahama islands, which always runs from north to south. A strong Current runs through the Streight of Gibraltar, between Europe and Africa, into the Mediterranean sea, which is occasioned by the evaporations arising from that sea: for though there are nine capital rivers which empty themselves into it, viz. the Iberus, the Rhone, the Tiber, the Po, the Danube, the Niester, the Borysthenes, the Tanais, and the Nile, besides smaller ones, this current constantly runs through the streight to make up the deficiency. A current runs out of the Baltic sea into the German ocean, through the streight between Denmark and Sweden, called the Sound, which is the reason that there are no Tides in that sea.

Of Springs *and* Rivers.

The origin of Springs is a subject which has been greatly controverted among naturalists. The plainest hypothesis seems to be that of Dr. Edmund Halley. It is evident from experience, that there continually arises a vapour from the surface of the Sea, Rivers, and Lakes; this vapour is carried through the Atmosphere in the form of a cloud or mist, by the impulse of the winds; and, according as it meets with colder air, or is stopped in its progress by mountains, it condenses, and falls down in dew, snow, or rain; the water, in whichsoever of these shapes it descends, finds several chinks and crannies, through which it insinuates itself into the main body of the hills or mountains, where it is lodged in beds of stone or clay, according to the nature of the soil; and, by degrees, increasing its store and strength, it forces its way through the first outlet it meets with, and takes the name of a

Temporal Fountain or Spring, according to the capacity of the bason which supplies its current: and waters of the several Springs meeting, form little rills, brooks, and rivulets; and several of these uniting, form rivers; which finally return to the Sea, from whence the waters were first exhaled; and thus a continual circulation of water is produced between the sea and land. As all Rivers finally descend to the sea, it follows, that the land must gradually rise from the sea towards the heads of Rivers; which, for the most part, are observed to begin in high lands: the courses of some Rivers, or their lengths from the Spring-head to the sea, are many hundreds of miles; some run many hundreds of leagues; so that, in general, the longer the River, the more the country rises. The rain which falls on the land, and is not carried off to the sea, soaks into the Earth; where some of it is deposited in caverns to which it finds access: but a great quantity of it, by assimilating particles of different kinds, is expended in the production of vegetables, minerals, and fossils. There are very few places in the Earth where water is not to be found by digging; but it is found in some places at a much less depth than in others. Those who keep journals of the weather, among other things, remark the quantity of rain which falls annually in the neighbourhood of the place where such journals are kept; and this being known in many distant places, the quantity of rain which falls on a whole country in a year may be nearly found: now the quantity of water discharged by the Rivers in that country being also found by proper experiments, it will be seen, that the quantity of rain which falls in a year is not only sufficient to supply the Rivers, but also to fertilize the ground in general.

Of the INHABITANTS *of the* EARTH.

The Inhabitants of the Earth are distinguished by Geographers, according to the several meridians and parallels of latitude under which they live, and are denominated either Periæci, Antæci, or Antipodes.—The Periæci are those who live under the same parallel of latitude, but opposite meridians; the lengths of their days and nights are the same, as their seasons are, because they are situated at the same distance from the Equator; but when it is noon-day with the one, it is midnight with the other, there being 12 hours between them in either an east or a west direction.—The Antæci are those who lie under the same meridian, but opposite parallels. These also are equidistant from the Equator, but the one is in south latitude, and the other in north latitude. The Antæci have the same noon-day, but the longest day with one, is the shortest day with the other; consequently, when it is summer with one, it is winter with the other. The length of the day with one, is also equal in length to the night of the other.—As to the Antipodes, they are placed in diametrically opposite situations to each other; the feet of the one

being directly opposite to the feet of the other: they lie under opposite parallels and opposite meridians: when it is midnight with the one, it is noon-day with the other: the longest day with one is the shortest day with the other: and the length of the day with one, is equal to the length of the other's night: their seasons also are opposite; for when it is summer with one, it is winter with the other.

The Earth's inhabitants are also distinguished according to the various ways in which their shadows fall at noon-day, and are called either Amphiscii, Ascii, Heteroscii, or Periscii.—The Amphiscii inhabit the Torrid Zone, between the Tropics of Capricorn and Cancer, and have their shadows one part of the year north of them at noon-day, and the other part of the year south of them at noon-day, according to that place of the Ecliptic which the Sun is in; and as the Sun is vertical to these people twice in every year, they are then called Ascii, because they have no shadow at all.—The Heteroscii are those people who inhabit the Temperate Zones, viz. those spaces which are between the Tropics and the Polar Circles: their shadows always fall one way; the shadows of those who inhabit the North Temperate Zone falling always north at noon-day; and the shadows of those who inhabit the South Temperate Zone, falling constantly South at noon-day.—The Periscii are those who inhabit either of the Frigid Zones; the North Frigid Zone being that space which is between the Arctic Circle and the North Pole, and the South Frigid Zone being that which is between the Antarctic Circle and the South Pole. At either of these zones, during their summer signs, the Sun moves round them without setting, so that their shadows are successively cast to every point of the horizon.

Of the NATURAL DIVISION *of the* TERRAQUEOUS GLOBE.

By this Natural Division is meant the parts into which the surface of the Earth is divided by the interposition of land and water. The superficies, or surface, of the Terraqueous Globe, has nearly three parts in four covered by the waters, and somewhat more than the other fourth part is land.

Geographers generally reckon four Continents, or very large portions of land, each containing many countries; namely, Europe, Asia, Africa, and America; and also the continents near the Poles. That about the North Pole is called the Terra Arctica; and that about the South Pole is called the Terra Antarctica. From what is yet known of these polar continents, they appear to have very few inhabitants; neither are the lands parcelled out into different kingdoms and states like to the above-named four continents: besides these continents, there are, in the neighbourhood of each of them, several pieces of land quite surrounded by the sea, which are called Islands. These continents of Europe, Asia, and Africa, are contiguous in some parts, and

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lie mostly in the northern hemisphere; and so does the greatest part of America; which is therefore called North America, and stretches very near to the North Pole; but this is not yet determined, because the difficulties of approaching the Pole, on account of the intense cold, have not hitherto been surmounted; the other part, called South America, lies chiefly in the southern hemisphere: these two parts of America are joined together by a narrow piece of land called an Isthmus, known by the name of the Isthmus of Darien. Asia and Africa are also joined together by such a narrow neck of land, called the Isthmus of Suez.

As the waters separate the continents, so the continents separate the waters, and thereby form five very large collections of waters called Oceans; namely, the Northern Ocean, the Pacific Ocean, the Southern Ocean, the Indian Ocean, and the Atlantic Ocean. The Northern Ocean flows along the coasts of the Arctic continent, and the northern parts of Europe, Asia, and America. The Pacific Ocean, which is larger than all the other oceans put together, washes the western and north-western shores of America, and the eastern and north-eastern shores of Asia; it extends east and west about 10,000 miles, and north and south 11,000 miles. The Southern Ocean lies to the southward of America and Africa; it joins the Pacific Ocean to the southward, and skirts some parts of the Antarctic continent; its extent is not yet known. The Indian Ocean lies chiefly to the south of Asia, but extends to the Pacific Ocean on the east, and to parts of the southern or Antarctic continent; it extends about 4000 miles east and west, and between 7 and 8000 miles north and south. The Atlantic Ocean lies chiefly between America to the west, and Europe and Africa on the east, and joins to the Indian and Southern Oceans; its extent from north to south is about 6000 miles, and from east to west between 3 and 4000 miles; the northern part is usually called the Western Ocean, as lying to the westward of Europe. It must not be imagined that these oceans are distinct parts, bounded by land; for all of them together make one great connected mass of water; but are named as above, from their situation with respect to the continents; neither are the extents above-mentioned to be understood otherwise than on a mean; they being in some places more, and in other places less, than the number of miles assigned to the respective oceans.—These oceans also, on the parts contiguous to the land, have very irregular boundaries; some very large parts, extending between the continents, or within a continent, are called Seas; other parts of a less size, flowing within some hollow part of the land, are called Bays or Gulphs; if the passage from the ocean or sea, into the gulph, is a narrow channel, the passage is called a Streight. There are, in some of the continents, very large pieces of water, called Lakes, which do not appear to have any connection with the oceans or seas. A part of land, which

is almost encompassed by water, is called a Peninsula; and the narrow neck by which the peninsula is joined to the other land, is called an Isthmus: a mountain extending into the sea, is called a Promontory; and that part of a promontory most extended into the sea, is called a Cape or Headland.—See p. 213.

Of Latitude.

Latitude is the distance of any place from the Equator, measured in degrees and minutes, upon the meridian of that place. Latitude is either north or south, according as the place is situated on the north or south side of the Equator. Each degree contains 60 minutes or geographical miles, and each minute may be divided into as many seconds. There are 90 degrees of a great circle between the Equator and one of its poles; and circles parallel to the Equator passing through every one of these degrees, or through any part of them, are called Parallels of Latitude: so that the Latitude of any point on the surface of the globe, is the distance from the Equator of the parallel of Latitude passing through that point. The Complement of Latitude, is the number of degrees and minutes which the Latitude of any place requires to make it equal to 90 degrees, the space between the Equator and the Pole. Thus, the Latitude of London is 51 degrees 32 minutes, north, so that its complement of Latitude is 38 degrees 28 minutes; for 38 degrees 28 minutes being added to 51 degrees 32 minutes will make 90 degrees.

Of Longitude.

Every place on the earth's surface has its meridian, and all the meridians intersect the Equator in perpendicular manner, and meet in the poles; therefore, the distance of any two meridians is greatest at the Equator; and this difference is denominated the Difference of Longitude of those two places or meridians; which is either east or west of the other meridian, as far as 180 degrees.

Every 15 degrees of Longitude make an hour difference in the time of the day: for if it be twelve o'clock in London, it will be eleven o'clock 15 degrees west of that place; and, consequently, it will be one o'clock (or an hour after noon) 15 degrees east of London.

A TABLE, shewing, in every Degree of Latitude, the number of Geographical Miles, answering to one Degree of Longitude in the Equator.

Degrees of Latitude.	*Geographical Miles, and 100th Parts.*	*Degrees of Latitude.*	*Geographical Miles, and 100th Parts.*	*Degrees of Latitude.*	*Geographical Miles, and 100th Parts.*	*Degrees of Latitude.*	*Geographical Miles, and 100th Parts.*
1	59.99	24	54.81	47	40.92	70	20.52
2	59.96	25	54.38	48	40.15	71	19.54
3	59.92	26	53.93	49	39.36	72	18.55
4	59.86	27	53.46	50	38.57	73	17.54
5	59.77	28	52.97	51	37.73	74	16.53
6	59.67	29	52.48	52	36.94	75	15.52
7	59.56	30	51.96	53	36.11	76	14.51
8	59.42	31	51.43	54	35.26	77	13.50
9	59.26	32	50.88	55	34.41	78	12.48
10	59.08	33	50.32	56	33.55	79	11.45
11	58.89	34	49.74	57	32.67	80	10.42
12	58.68	35	49.15	58	31.79	81	9.38
13	58.46	36	48.54	59	30.90	82	8.35
14	58.22	37	47.92	60	30.00	83	7.32
15	57.95	38	47.28	61	29.09	84	6.28
16	57.67	39	46.62	62	28.17	85	5.23
17	57.38	40	45.96	63	27.24	86	4.18
18	57.06	41	45.28	64	26.30	87	3.14
19	56.73	42	44.52	65	25.36	88	2.09
20	56.38	43	43.88	66	24.41	89	1.05
21	55.01	44	43.16	67	23.45	90	0.00
22	54.63	45	42.43	68	22.48		
23	54.23	46	41.68	69	21.51		

Of CLIMATES.

A Climate is a space upon the Terrestrial Globe, contained between two parallels, and at such a distance from each other, that the longest day in one differs half an hour from the longest day in the other parallel.

The days are always 12 hours long at the Equator, and from thence to that parallel of latitude where the days are 12 hours and an half long is the first Climate; from thence to the latitude where the days are 13 hours long, is the second Climate; and so on to the third, fourth, &c. Climates. The breadth of these half-hour Climates decrease as they approach the Poles; so that a Climate is scarcely four miles broad at the polar circles. Within these circles the breadths of the Climates are not estimated by the

increase of half hours, but by the difference of a month in the length of the longest days.

In the following Table of Climates, Ricciolus, from whom it is taken, considers the increase of days to be by half hours, from 12 to 16 hours; by hours from 16 to 20 hours; by two hours from 20 to 24 hours; and then by a successive increase of a month for the duration of the constant appearance of the Sun above the Horizon.

TABLE OF CLIMATES.

Climates.	*Length of Days in Hours.*	*Lat. Climates end in.*	*Breadth of the Climates.*	*Climates.*	*Length of the Day.*		*Lat. Climates end in.*	*Breadth of the Climates.*
		° ′	° ′				° ′	° ′
I	12½	7 48	7 48	XIII	22 Hours.		65 10	2 26
II	13	15 36	7 48	XIV	24 Hours.		65 54	44
III	13½	23 8	7 32		North Lat.	South Lat.		
IV	14	29 49	6 41					
V	14½	35 35	5 46		Days.			
VI	15	40 32	4 57	XV	31	30	66 53	59
VII	15½	44 42	4 10	XVI	62	60	69 30	2 37
VIII	16	48 15	3 33	XVII	93	89	73 0	3 30
IX	17	53 46	3 31	XVIII	124	120	78 6	5 6
X	18	57 44	3 58	XIX	156	150	84 0	5 54
XI	19	60 39	2 55	XX	188	178	90 0	6 0
XII	20	62 44	2 5					

Of GEOGRAPHICAL TERMS.

Geography, as well as other arts and sciences, has terms peculiar to itself; some of which have relation to the earth, and others to the water.

A CONTINENT, by some called Terra Firma, is a large portion of the earth, which comprehends several countries that are not separated by any sea: thus Europe is a Continent.

An ISLAND, or Isle, is a part of the earth which is entirely surrounded by water: thus Great Britain is an Island.

A PENINSULA, or Chersonese, is a quantity of land which is joined to a Continent only by a narrow slip or neck of the same, it being on every other part encompassed with water; as the Peninsula or California, in North America.

An ISTHMUS, or neck of land, is that part by which a peninsula is joined to a Continent: as by the Isthmus of Suez, Africa and Asia are joined together.

A PROMONTORY, or Cape, is a high part of land, which advances, or stretches, into the sea: thus the Cape of Good Hope, in the south of Africa, is a Promontory.

A MOUNTAIN, is a vast heap of earth raised to a great height, either by nature or by art: as the Mountain of Ararat, in Asia.

An OCEAN, is a vast collection of waters surrounding a considerable part of the Continent: as the Atlantic Ocean.

A SEA, is a smaller collection of waters: as the British and Irish Seas.

A GULPH, is a part of the sea which is nearly surrounded with land: as the Gulph of Venice in Europe, and the Persian Gulph in Asia.

A BAY, has a wider entrance than a Gulph: as the Bay of Biscay.

A ROAD, is a place upon any coast where there is a good anchorage, and where vessels, in some sense, are sheltered from the wind.

A STREIGHT, is a narrow passage that joins two seas: as the Streight of Gibraltar, which joins the Mediterranean Sea to the Atlantic Ocean.

A LAKE, is a large collection of water entirely surrounded by land, having no visible communication with the sea: as the Caspian Lake or Sea, in Asia; Lake Ontario, in North America, &c.

A RIVER, is a stream of water that has its source from a spring, which keeps constantly running till it falls into some other river, or into the sea: as the Thames, the Mersey, &c.

Of the RELIGIONS *of the* WORLD.

All the different religions in every part of the world may be reduced to four; Judaism, Christianity, Mahometanism, and Paganism. Judaism has two branches: Judaism, properly so called; and the Samaritan religion, which differs from the former in many particulars.

Christianity has three branches: that called the Roman Catholic Religion; that of the Greek church, which is divided into different sects; and the Protestant. These last are divided into that of the Lutherans, the Calvinists, Anabaptists, Methodists, Swedenborgians, Socinians, and Quakers. However, the Church of England, which is the best constituted in the world, cannot properly be said to be any of these.

Mahometanism, is divided into two sects; namely, that of Omar, followed by the Turks, Moguls, and the Mahometans of Africa, and that of Aly, son-in-law of Mahomet, followed by the Persians. There are Pagans all over the world, except in Europe; but their religion are of different kinds, and so numerous that it is impossible to describe them all. Paganism is said to extend over one half of Asia, five parts in six in Africa, and nineteen parts of twenty of the inhabitants of America. The most extensive is that of Fo, which prevails over Thibet, or the western Tartary, the two peninsulas of the Indias, with seven parts in eight of the inhabitants of the Mogul's empire, China, and most of the Indian islands.

Christianity prevails all over Europe, and among all the European settlements in America; and it is still professed in many parts of the Turkish dominions: not to mention the converts made by the Portuguese in Africa and the East Indies.

The Jews are no longer a nation, and therefore Judaism cannot properly be said to be established any where; but as the Jews themselves are spread over all the old continent, their religion is still kept up among them. They are said of late to have got footing in America; but they are so few in number they are not worth notice.

Mahometanism prevails all over the Turkish empire in Europe and Asia, Little Tartary, Arabia, Persia, Great and Little Bocharia, the Mogul's empire, many of the Indian Islands, and the northern and eastern coasts of Africa; insomuch that some authors pretend to say, that it is six times more extended than Christianity.

Of the different LANGUAGES.

Some geographers inform us, that there are fifteen general languages; namely, the Latin, the Teutonic, the Sclavonian, the Greek, the Arabian, the Tartarian, the Chinese, the African or Bereberan, the Ethiopian, that of the Negroes, the Mexican, the Peruvian, the Taphuyan, the Guayran, and the Calibavan.

These five last are spoken in America ; but are not so general as those authors pretend ; for even in North America, which is best known to the Europeans in general, there is so great a variety that it would be very difficult to enumerate them all. The same may be said of the language of the Negroes, for there is no person whatever who has sailed along the coast of Africa, from the river of Senegal to the Cape of Good Hope, but must have met with a great number of tongues not understood by their neighbours, even in those small districts to which the Europeans have given the name of kingdoms. The same may be said of the inhabitants of the eastern coast of Africa, from the Cape of Good Hope to the Streights of Babelmandel.

The Latin is now a dead language, though it continues to be taught in schools all over Europe. Some would have the Teutonic to be the natural language of Germany, Scandinavia, and the British islands, they being only different dialects of the same tongue. However, some affirm the Celtic, or Keltic, was the original and general language of Europe ; and that it still prevails in the north of Scotland, Ireland, and Wales.

The Sclavonian is said to be the original of the Dalmatian, Bosnian, Albanian, Servian, Bulgarian, Moldavian, Bohemian, Silesian, Polish, Russian, Mingrelian, and Circassian.

The Greek was extended wherever its empire prevailed, as did the Latin throughout the Roman empire, and which, in some measure, swallowed up the Greek; however, this last is still spoken, though corruptly, in the southern part of Turkey in Europe; that is, in ancient Greece, and the islands of the Archipelago, as also in Natolia in Asia. The Arabic is spoken, or at least understood, in Arabia, Turkey in Asia, Persia, and India; and likewise in Barbary, Egypt, Zara, Nubia, and Zanguebar.

The Tartarian is understood in Great Tartary, Muscovite Tartary, and in some parts of Turkey in Asia, the Mogul's country, and China. The Chinese is not only spoken in China, but in some parts of India, and many of the Islands of Asia.

The Latin tongue, as was observed before, is a dead language ; but there is still a strong tincture of it in the Italian, French, Spanish, and Portugues languages. It has also furnished not only the English, but almost all the languages in Europe, with a great number of words ; and even the Greek is generally made use of in our technical terms, because arts and sciences were in some sense derived from the Grecians. But we must not forget the Chaldaic, from which the Western Syraic, the Hebrew, the Arabic, and the Abyssinian languages, are derived. The Malayan tongue prevails over a great part of India beyond the Ganges, and many of the islands near it. There is still another, called the Manchew, which prevails in the eastern parts of Tartary. After all, there is no doubt to be made but there are many others, of which we have not the least account ; therefore of all the lan-

guages spoken at present in different parts of the world our knowledge must needs be very imperfect.

Of the INHABITANTS *of the* EARTH.

Though there is a great variety of complexions, or colours of the skin, in different parts of the world, yet they may all be reduced to four; namely, the white, the black, the tawny, and the red. Among the whites may be reckoned the Europeans, the inhabitants of Natolia, Armenia, Georgia, the inhabitants of Persia near the Caspian sea, some of the Tartars, and the Chinese in the northern parts of China.

The people are tawny in Barbary, Egypt, Zara, Sahara, and Zanguebar; that is, in the north parts of Africa; as also the inhabitants of Asia, in Syria, Diarbec, Arabia, the southern provinces of China, and in some of the most eastern islands of Asia. Many of the Indians are yellowish, but not so perfectly as to deserve being placed in a distinct class.

All the Americans, except the Eskimaux, are red, which appears more or less bright, according to their different manner of living, and being exposed more or less to the inclemency of the air; besides, it is almost an universal custom to daub themselves over with bear's grease, or oil, which in some measure conceals their real complexion; therefore it is no wonder that travellers have affirmed that their colour is olive. But where they are more civilized, and have been prevailed upon to clothe themselves, they are all of a bright red copper-colour: and, which is very remarkable, have no hair on any part of their bodies, except their heads, where it is black and coarse, like horse-hair. Some have observed, that they employ their women to pull off the beards by the roots; and in this most geographers have blindly copied each other. However, it is now well known, from the relations of the most intelligent and curious travellers, who have been in different parts of America, that they have not the least sign of a beard; and therefore they could not be deprived of them in that manner.—Besides, we have had Americans here in England, whose beards must have appeared, if they ever had any; because if you pluck up as many hairs by the roots as you please, they will all grow again, which every one has it in his power to experience.

The Africans in general are all black, except those above-mentioned; and these, as some pretend, were originally colonies from different parts of Europe and Asia. The hair of their heads is curled like wool, and this without any exception, unless on the eastern coasts of Africa and Madagascar, where Arabians have settled among them; and even in these places their skins continue black, and their hair, though long, always curls. There are a great many blacks in Asia, particularly in India on this side the Ganges; but their hair is long and straight. Some would have

those to be only an olive complexion, because they are not quite so black as the Negroes.

The visages of the inhabitants of different parts of the world are also very different; for some are very frightful, such as the Laplanders, the Eskimaux, and more particularly the Samoiedes. As for the Europeans, their features are well known, and in general they are the most beautiful of all mankind, except the inhabitants of Georgia in Asia, who are thought to have the best complexions and the most handsome faces in the world. The Spaniards and Portuguese are not so fair as some of the Europeans, which is thought to be owing to their mixture with the Moors, who originally came out of Syria and Arabia. The inhabitants of the peninsulas of India, though their complexions are so dark, have generally European features; whereas the blacks of Africa have almost universally thick lips and flat noses. There might be many other distinctions between the people of different countries, but as they more or less approach in their aspect to those already mentioned, they need not be particularly taken notice of; as for the inhabitants of New Guinea and New Holland, though they always have their eyes almost shut, and a tooth wanting in the upper jaw before, yet this is only an accidental difference.

DESCRIPTION OF EUROPE.

Europe, called by the people of Asia *Frankistan,* is one of the four grand divisions of the world; and the smallest in extent, yielding considerably even to Africa. From Cabo di Rocco, styled by our mariners the Rock of Lisbon, in the west, to the Uralian mountains in the east, the length may be about 3300 British miles; and the breadth from Cape Nord, in Danish Lapland, to Cape Matapan, the southern extremity of Greece, may be about 2350. The contents in square miles have been estimated with such diversity of opinion, such estimates being in truth arbitrary and only comparative, that it is sufficient to take the medial number of about two millions and a half. More than a third part of Europe, towards the north and east, has only been known with precision in modern times. On the south it is limited by the Mediterranean sea; on the west by the Atlantic, which contains the furthest European isle, that of Iceland, Greenland being now regarded by most geographers as a part of North America. On the north, the boundary is the Arctic Ocean, embracing the remote isles of Spitzbergen, and Nova Zembla. Toward the east, according to Mr. Pinkerton, the boundaries require some regulation.—The Uralian mountains, a grand natural limit, not extending to the Arctic Ocean, the river Cara, which flows into the sea of Karskoye, is admitted as a boundary. The Uralian limit extends to about fifty-six degrees of north latitude; to the south of which the grand confines of Europe and Asia are sought in the petty distinctions of Russian governments. More natural limits might

be ascertained by tracing the river Oufa, from its source to its junction with the Belaia. Thence along the Kama to the Volga, which would constitute a striking natural division, to the town of Sarepta; whence a short ideal line, the only one admitted in this delineation, will lead due west to the river Don, which would complete the unascertained boundary; that on the north and west of the Euxine being clear and precise.

The ancient population of Europe consisted of the Celts in the west and south; the Fins in the north-east; and the Laplanders, a diminutive race like the Samoiedes of Asia, in the furthest north, and who seem to have improved their original rude language by adopting, in a great measure, that of their more civilized neighbours the Fins. Those ancient inhabitants, who seems to have been thinly scattered, were driven towards the west and north by the Scythians or Goths from Asia, whose descendants occupy the greater part of Europe; by the Sarmathians, or Sclavonic tribes, also from Asia, the ancestors of the Russians, Poles, &c. and who were accompanied by the Heruli, Lithuania, using what is now called the Lettic speech, to be found in Prussia, Samogitia, Courland, and Livonia, being, according to Tooke in his View of Russia, akin to the Sclavonic language. From Africa, the colony of Iberi, northern Mauretani, passed into Spain at a very early period. The later accession of Hungarians and Turks from Asia may likewise be noticed. But the ancient geographers have greatly erred in their views and knowledge of Europe. Of Scandinavia, the ancients only knew the southern part, as far as the lakes of Weter and Wener. The Roman ships explored the southern shores of the Baltic as far as the river Rubo, or the western Dwina, and discovered the names of several tribes along the shores; but of the central parts of Germany it is evident, from the maps of Ptolemy, that they had no just ideas; so that the tribes which he enumerates may with more propriety be assigned to the northern parts along the Baltic, or to the southern on the left of the Danube. The Carpathian or Sarmatian mountains were well known, but the line of 50 or 52 degrees of north latitude confines the ancient knowledge in the north-east. A singularity in the ancient descriptions has also often misled; for as the mountains, in the savage state of Europe, were mostly crowned with forests, the same term was used in several barbarous languages to express both: so that the ancients often place alpine districts where the hand of nature had only planted forests. This remark becomes essential in the comparison of ancient and modern geography. The Riphæan mountains are vainly supposed to have been the Uralian chain, which were to the ancients hid in the profoundest darkness, instead of a large forest running from east to west. The Sevo Mons of Pliny, which he positively assigns to the north of Germany, though geographers, in direct opposition to his text, transfer it to Norway, a region almost as un-

known to the ancients as America, must be regarded as a vast forest extending to some promontory; and the Venedice Montes of Ptolemy are in the like predicament, for modern knowledge evinces that no such mountains exist.

The Christian religion prevails throughout Europe, except in Turkey, where however at least one half of the inhabitants are attached to the Greek church. Wherever the Christian faith has penetrated, knowledge, industry, and civilization, have been the happy result. Among the barbarous tribes in the north, the progress was unhappily slow, Scandinavia remaining pagan till the eleventh century; and some Sclavonic tribes on the south of the Baltic till the thirteenth; and it is very little above a century ago that the Laplanders were converted by missions from Denmark. The two grand distinctions are Catholics and Protestants; the former in the south, where the passions are more warm, and the imagination more delighted with splendour: the latter in the north, where the satisfaction of cooler judgment preponderates. This universality of the Christian religion has been followed by another superlative advantage, that of constituting all the states of Europe, as it were, into one grand society for the encouragement of the arts and sciences; so that any useful discovery made in one nation passes to the rest with celerity. This fair portion of the globe is chiefly situated in the temperate zone; where freedom from the excessive heat of Asia and Africa has contributed to the vigour of the frame, and the energy of the mind.

In a general view of Europe, one of the most interesting features is the number and extent of the inland seas, justly regarded as chief causes of the extensive industry and civilization, and consequently superiority, to the other grand divisions of the globe. Among these inland seas the Mediterranean is justly pre-eminent, having been the centre of civilization both to ancient and modern Europe. The columns of Hercules marked its western boundary, being the mountain or rock of Abyla, now called Ceuta; and Kalph in Spain, now the celebrated rock of Gibraltar. On its northern side open two immense gulphs, that of Venice and the Archipelago; the former being the Adriatic, the latter the Ægean sea of the ancients. From this last a streight, called the Hellespont, conducts to the sea of Marmora, the classical Propontis; and another, now styled the streight of Constantinople, the ancient Thracian Bosphorus, leads to the Euxine, or Black Sea; which, to the north, presents the Paulus Mæotis, or sea of Azof, the utmost maritime limit of Europe in that quarter. This wide expanse of the Mediterranean is beautifully sprinkled with islands, and environed with opulent coasts, abounding with the most sublime and picturesque features of nature: tides are not perceivable except in the narrowest streights; but there is a strong current along the Italian shore, from the west to the east, and towards the African in an opposite direction. In the Adriatic, the current

runs north-west along Dalmatia, and returns by the opposite shore of Italy. The second grand inland sea of Europe is the Baltic, by the Germans called the Eastern Sea; whence the Easterlings, a people from the shores of the Baltic. This extensive inlet opens from the German Sea, by a gulph pointing north-east, called the Skager Rack; and afterwards passes south, in what is called the Cattegat, to the south-east of which is the Sound of Elsinore, tributary to Denmark. The Baltic afterwards spreads widely to the north-east, and is divided into two extensive branches, called the gulphs of Bothnia and Finland, both covered with ice for four or five months of the northern winter. Ancient historians report that wolves have passed on the ice from Norway to Jutland. The greatest depth of this sea is said not to exceed fifty fathoms. Swedish physiologists assert, that it loses about four feet in extent in the course of a century; and that the water does not contain above one-thirtieth part of salt, whereas other sea water often holds a tenth: this freshness they impute to the quantity of ice; and they further assert, that when the north-wind blows, the waters become sufficiently fresh to be employed for domestic purposes. Tides are there unknown, and the fish few. The third inland sea of Europe is called the White Sea, in the north of Russia. In the reign of Alfred it was known to us by the name of the Qven Sea; and the Icelandic writers styled it the sea of Granvik, on the shore of which stood Biarmia. The White Sea contains a number of small islands; but the accounts yet given of them have been brief and unsatisfactory.

Among the other maritime divisions may be named the German Sea, so called because it waters the western shores of ancient Germany, from the Rhine to the extremity of Jutland. It is now styled the North Sea, a term probably adopted by us from the Dutch. It may be regarded as a part of the Atlantic Ocean, terminating at the streights of Dover; whence the British Channel extends to the west. The Bay of Biscay is another large inlet of the Atlantic. The Bristol Channel is rather the estuary, or wide frith, of the Severn. Between Great Britain and Ireland are St. George's Channel on the south, and the Irish Sea in the centre, which leads to the North Channel. That part of the Atlantic which passes between Scotland and the extreme range of the western isles, from Barra to Lewis, has received no distinctive appellation, though it might be aptly styled the Hebudian Channel. To the north of Scotland is the Deucaledonian Sea of the ancients; which, being considered as extending into and throughout the Baltic, was also styled the Sarmatian. To the north of Europe is the Artic Ocean, the solitary reservoir of myriads of miles of ice; the very skirts of which, floating in enormous mountains, crowned with brilliant pinnacles of every hue, delight the eye and appal the heart of the mariner. Yet this enormous waste is, in the

hand of Providence, a fertile field of provisions for the human race. Here the vast shoals of herrings seem to seek a refuge from their numerous foes, and to breed their millions in security.

To enumerate the smaller gulphs, the streights, and other minute diversities of the seas, would be superfluous; but the large banks or shoals, supposed to be ridges of submarine mountains, and which are frequently the resort of cod and other fish, deserve particular attention. The Goodwin Sands, off the coast of Kent, are indeed rather dangerous to the mariner, than inviting to the fisher; but on the coasts of Holland there are many banks which supply excellent fish, as turbot, soal, plaice, &c. Further to the north is the extensive Dogger-bank, stretching south-east and north-west; beginning about twelve leagues from Flamborough-head, and extending near seventy-two leagues towards the coast of Jutland. Between the Dogger and the Well-bank, to the south, are the Silverpits of the mariners, which supply London with cod, a fish which loves the deep water near the banks, while the flat fish delight in the shallows. The Ore and Lemon lie between these banks and the British shores. To the north-east of the Dogger-bank is the Hornriff, a narrow strip extending to Jutland; the Jutts-riff is a sand-bank stretching, like a crescent, from the mouth of the Baltic into the German sea. The Mar-bank begins opposite to Berwick, but is only about fifteen miles in length. Further to the east extends the Long Fortys, of great extent, from Buchan Ness to Newcastle; and from forty to one hundred miles from the shore. From the coast of Buchan a bank also reaches across the German Sea, towards the Jutts-riff. What are called the Montrose Pits, as being in the latitude of that town, though to the east of the Long Fortys, are hollows, from three to four miles in diameter, from seventy to one hundred fathoms deep, with a soft muddy bottom, in a bank of gravel about fifty miles long, under forty fathom of water. In the open Atlantic the largest bank is that of Newfoundland; and there is a considerable bank to the west of the Hebudes, abounding with cod and other fish.

The chief rivers of Europe are first the Volga, the far greater part of which is included in Europe; the Danube is the next in extent; and is followed by the Dnieper or Nieper, the Rhine, and the Elbe. The most elevated mountains are the Alps, properly so called, which are followed by the Pyrenees, and the extensive ridge which divides Norway from Sweden. The Carpathian mountains, and the chain of Emineh, or Hœmus, are with the Appennines, of inferior extent and height.

The nations of Europe consist of, 1. The united kingdom of Great Britain and Ireland. 2. France. 3. Russia. 4. The Austrian dominions. 5. Those of Prussia. 6. Spain. 7. Turkey. 8. Holland, or the United Provinces, now the kingdom of Holland. 9. Denmark. 10. Sweden. 11. Portugal. 12. Switzer-

land. 13. The states of Germany. 14. Those of Italy; and, 15. The kingdoms of Sicily and Sardinia. The most civilized and intelligent quarter of the world is Europe; the most barbarous is Africa. The most distinguished countries of antiquity, are countries of little note and influence in modern times, —as Greece, Asia Minor, Palestine, Egypt, and Italy. The most barbarous nations known to the polished nations of antiquity, are become the most polished among the moderns,—as Albion, Gallia, Belgium, and Helvetia; now Britain, France, Holland, and Switzerland.

The preponderance of civilization is in the northern hemisphere, there being no distinguished nation in the southern hemisphere.

ENGLAND, the southern part of the island and kingdom of Great Britain, is bounded on the north by Scotland, on the north-east and east by the German ocean, on the south by the English Channel, and on the west by St. George's Channel, the principality of Wales, and the Irish Sea. It is of a triangular form: and from the South Foreland in Kent, which may be termed the east point of the triangle, to Berwick upon Tweed, which is the north, its length is 345 miles; from that point to the Land's End, in Cornwall, which is the west, it is 425; and the breadth thence to the South Foreland is 340. It lies between $1\frac{5}{6}$ degree east, and $5\frac{3}{4}$ west longitude, and between $49\frac{1}{2}\frac{9}{0}$ and 56 degrees north latitude. The face of the country affords all that beautiful variety which can be found in the most extensive tracts of the globe; not, however, without romantic, and even dreary scenes, lofty mountains, craggy rocks, black barren moors, and wide uncultivated heaths; and yet few countries have a smaller proportion of land absolutely sterile and incapable of culture. The richest parts are, in general, the midland and southern. Toward the north it partakes of the barrenness of the neighbouring Scotland: the east coast is, in many parts, sandy and marshy. A range of rude and elevated land, sometimes rising into lofty mountains, extends from the borders of Scotland to the very heart of England, running from north to south, and forming a natural division between the east and west sides of the kingdom. Cornwall is also a rough hilly tract; and a similar character prevails in part of the adjacent counties. These mountainous tracts abound with various mineral treasures. The rivers are numerous; and the most considerable of them are the Thames, Severn, Humber, Medway, Trent, Ouze, Tyne, Tees, Eden, Avon, Derwent, Dee, and Mersey. The lakes are neither numerous nor extensive, and are chiefly in the north-west counties; those of Westmoreland and Cumberland, in particular, exhibit such varieties of beautiful scenery, as to have become for some years past the fashionable object of summer excursions from every part

of the country. With respect to climate, England is situated in the north part of the temperate zone, so that it enjoys but a moderate share of the genial influence of the sun. Its atmosphere is inclined to chilliness and moisture, subject to frequent and sudden changes, and is more favourable to the growth, than to the ripening, of the products of the earth. No country is clothed with so beautiful and lasting a verdure: but the harvests, especially in the northern parts, frequently suffer from unseasonable rains. The rigours of winter, however, and the heats of summer, are felt here in a much less degree than in parallel climates on the continent; a circumstance common to all islands. While the seaports in Holland and Germany are, every winter, locked up with ice, those of England, and even of Scotland, are never known to suffer this inconvenience. The whole country, some particular spots excepted, is sufficiently healthy; and the natural longevity of its inhabitants is equal to that of almost any region. All its most valuable productions, both animal and vegetable, have been imported from foreign countries, and have been kept up and improved by constant attention. Originally this great island seems to have been almost entirely overrun with wood, and peopled only by the inhabitants of the forest. Here formerly roamed the bear, the wolf, and the wild boar, now totally extirpated; large herds of stags ranged through the woods, roebucks bounded over the hills, and wild bulls grazed in the marshy pastures. By degrees the woods were destroyed, in order to make way for cultivation; the marshes were drained; and the wild animals, invaded in their retreats, gradually disappeared, and their places were supplied by the domestic kinds. England has now no other wild quadrupeds than some of the smaller kinds; as the fox, wild cat, badger, marten, and others of the weasel kind; the otter, hedgehog, hare, rabbit, squirrel, dormouse, mole, and several species of the rat and mouse. On the other hand, every kind of domestic animal, imported from abroad, has been reared to the greatest degree of perfection. The horse has been trained up for all the various purposes of strength and swiftness, so as to excel in those qualities the same animal in every other country. The horned cattle have been brought to the largest size and greatest justness of shape. The different races of sheep in England are variously distinguished, either for uncommon size, goodness of flesh, and plenty or fineness of wool. The deer of its parks, which are originally a foreign breed, are superior in beauty of skin, and delicacy of flesh, to those of most countries. Even the several kinds of dogs have been trained to degrees of courage, strength, and sagacity, rarely to be met with elsewhere. The improvement in the vegetable products of this island is not less striking than in the animal. Nuts, acorns, crabs, and a few wild berries, were almost all the variety of vegetable food which its woods could boast. To other countries, and to the efforts of culture, it is

indebted for corn, esculent roots and plants, and all its garden-fruit. The rivers and seas of England are stocked with a great variety of fish, which yield a plentiful article of provision to all ranks of people. The manufactures and commerce of this country are vast, extensive, and various; in the woollen, cotton, and hardware manufactures, in particular, it has long maintained a pre-eminence; and, though nature has denied it the rich fruits of other countries, yet the manufactures, if it may be so called, of home-made wines, in imitation of all the varieties of the foreign, has been brought to an uncommon degree of perfection. The government of England is a limited monarchy; the legislative power residing in the king, lords, and commons; and the executive in the king, the great officers of state, the judges, and all the inferior gradations of magistracy. The civil division of the country is divided into circuits, and shires, or counties; these last are subdivided into wapentakes, or hundreds, and parishes. There are assizes and sessions held in the different counties, for the more easy distribution of justice; the assizes are courts kept twice a year. Twelve judges are commissioned by the king for this purpose, and this they call going the circuit. At these assizes all civil and criminal causes may be determined: the first is called Lent assizes, soon after Hilary term; and the other called the Summer assizes, after Trinity term. The jury are chosen by the sheriff of the county, and they are only directed in points of law by the judges. There are six of these circuits, besides those in Wales, in which principality two distinct judges are appointed. Their names are as follow: 1. The Home Circuit, containing Herefordshire, Essex, Kent, Surry, and Sussex. 2. The Norfolk Circuit, containing the counties of Bucks, Bedford, Huntingdon, Cambridge, Suffolk, and Norfolk. 3. The Oxford Circuit, containing the counties of Oxford, Berks, Gloucester, Worcester, Monmouth, Hereford, Salop, and Stafford. 4. The Midland Circuit, containing the shires of Warwick, Leicester, Derby, Nottingham, Lincoln, Rutland, and Northampton. 5. The Northern Circuit, containing the counties of York, Durham, Northumberland, Lancaster, Westmoreland, and Cumberland. 6. The Western Circuit, containing Hants, Wilts, Dorset, Somerset, Devon, and Cornwall. Two other counties, Middlesex and Cheshire, are not included in any circuit. The established religion, as contained in the 39 Articles of the Church of England, is Calvinism; but these articles are interpreted, by the clergy in general, according to the more liberal principles of Arminius; and all other religions are tolerated. The ecclesiastical division of England is divided into two archbishoprics, called the provinces of Canterbury and York. That of Canterbury contains the dioceses of London, Winchester, Bath and Wells, Bristol, Chichester, Ely, Exeter, Gloucester, Hereford, Litchfield, and Coventry, Lincoln, Norwich, Oxford, Peterborough, Rochester,

Salisbury, and Worcester; besides the four Welsh bishoprics of St. David, Bangor, Llandaff, and St. Asaph. The province of York contains the dioceses of Durham, Chester, and Carlisle, and that of Sodor and Man. Every prelate of the sees enumerated, that of Sodor and Man excepted, has a seat in the House of Lords. London is the capital.

Before we proceed with the remaining part of Great Britain, we think it will be useful to give first a Description of the several Counties of England;—then a List of the Cities, Market-towns, and Boroughs; their Distances from London, and the Days on which their Markets are held.

BEDFORDSHIRE is an inland county, bounded on the N. and N. W. by Northamptonshire; on the S. by Hertfordshire; and by Buckinghamshire on the W. and contains 9 hundreds, 10 market-towns, and 124 parishes. The form of it is oval, 35 miles long, 22 broad, and about 100 in circumference. The air is serene and healthy. Its rivers are, the Ouse, Ivel, and Ouzel. Its chief products are corn, butter, and fuller's earth; its manufactures, bone-lace, straw-ware, and hats. The market-towns are, Bedford, Potton, Biggleswade, Shefford, Ampthill, Harold, Woburn, Tuddington, Dunstable, Leighton-Buzzard, and Luton. It sends 4 members to parliament.

BERKSHIRE is an inland county, bounded on the east by Middlesex and Surry; on the W. by Wiltshire and Gloucestershire; on the N. by the river Thames, which separates it from Oxfordshire and Buckinghamshire; on the South by Hampshire. In form it has been, aptly enough, compared to a slipper; the length is about 50 miles, the breadth from 6 to 25 miles; and in circumference it is 120. It is divided into 20 hundreds; the market-towns, 12 in number, are Maidenhead, Reading, Farringdon, Abingdon, Wantage, East Ilsley, Wallingford, Hungerford, Newbury, Lambourne, Windsor, and Oakingham: and it contains 156 parishes, lies in the diocese of Salisbury and province of Canterbury, and sends 9 members to parliament. The air, in general, is very wholesome. The principal rivers are, the Thames, Kennet, Lamborn, and Loddon. The east part has much uncultivated land, as Windsor Forest and its appendages; the west and middle parts produce grain in abundance. Reading is the county town.

BUCKINGHAMSHIRE is an inland county, separated on the S. from Berkshire by the river Thames; on the W. it borders on Oxfordshire, on the north on Northamptonshire; and Bedfordshire, Hertfordshire, and part of Middlesex, lie on the east. It is in length about 39 miles, in breadth about 18, and in circumference 138 miles. It is in the diocese of Lincoln, and contains 8 hundreds, 203 parishes, and 15 market-towns. Its prin-

cipal rivers are, the Thames, Coln, Ouze, and Tame. The air is healthy, and the soil rich, being chiefly chalk or marl. The most general manufacture is bone-lace and paper; and the woods of the hills, chiefly beech, form a considerable article of profit, both as fuel and timber. The market-towns are, Buckingham, Chipping Wycomb, Ailsbury, Agmondesham, Wendover, Great Marlow, Colnbrook, Eaton, Beaconfield, &c. It sends 14 members to parliament.

CAMBRIDGESHIRE is an inland county, bounded on the W. by Huntingdonshire and Bedfordshire, on the N. by Lincolnshire, on the E. by Norfolk and Suffolk, and by Essex and Hertfordshire on the S. It is about 50 miles in length from N. to S. 25 in breadth from E. to W. and 130 in circumference. It lies in the province of Canterbury, and diocese of Ely; and is divided into 15 hundreds, in which are contained one city, one borough, with a celebrated university, seven other market-towns, and 164 parishes. The principal rivers are, the Grant, Ouse, Nen, and Cam. The air and soil vary extremely: some parts, especially the southern and eastern, are pleasant and healthy; but the northern part, called the Isle of Ely, is low and fenny from the confluence of many rivers. All the waters of the middle part of England, which do not run into the Thames or the Trent, fall into these fens; and in the latter part of the year, when they are overflowed by water, they appear covered with fogs; so that while the higher grounds of the adjacent country glitter with the beams of the sun, the Isle of Ely appears wrapt in a mist. Cambridge is the county-town, and seat of a celebrated university, situate on the river Cam. It consists of 14 parishes, and is governed by a mayor, who, on entering upon his office, takes an oath to maintain the privileges of the university. The town-hall and shire-house are the only buildings of note that do not belong to the university: the county gaol is the gatehouse of an ancient castle, built by William the Conqueror. In the market-place, which consists of two spacious oblong squares united together, is a conduit that is constantly running. The university is supposed to have been founded during the heptarchy. It contains 12 colleges and 4 halls, which have equal privileges with the colleges. The colleges are, Peter House, Corpus Christi or Bennet, Gonville and Gaius, King's, Queen's, Jesus', Christ's, St. John's, Magdalen, Trinity, Emanuel, and Sidney Sussex. The halls are Clare, Pembroke, Trinity, and Catherine. Of the colleges, Peter House is the most ancient, being founded in 1257; and King's and Trinity colleges the most considerable. King's college is the noblest foundation in Europe, and the chapel one of the finest pieces of Gothic architecture in the world. The library, chapel, &c. of Trinity college, justly rank in the first place. The other structures belonging to the university are, the senate-house, a fine edifice, which, with St. Mary's church, the schools, the univer-

sity library, and other buildings, form a noble square. Here also s a botanical garden, and a general hospital, called Addenbrooke's from the name of the founder. The market-towns of the county are Newmarket, famous for its races, Linton, Caxton, Mersh or Marsh, Wisbeach, and Thorney. It sends 6 members to parliament.

CHESHIRE is a maritime county, bounded on the E. by Staffordshire and Derbyshire; on the W. by the Irish sea, with Flintshire and Denbighshire; on the N. by Lancashire; and on the S. by Shropshire. It is about 42 miles in length, 33 in breadth, without including the north-west corner which shoots out into the Irish sea, and forms a peninsula, called Wirral, about 16 miles long, and 7 broad. This county is in the province of York, and diocese of Chester, contains 7 hundreds, 88 parishes, a city, and 12 market-towns. The air of this county is generally esteemed healthy, it being more serene than that of Lancashire; and the soil is for the most part good. That part which is low and level was named by Edward I. *the Vale Royal of England,* on account of its great fruitfulness in corn, and the extraordinary richness of its pastures. This county has quarries in which mill-stones are dug, nearly equal to those brought from France. Very large quantities of fine cheese are made here, which is esteemed the best in England, insomuch that it is computed the inhabitants export to London, yearly, 14000 tons; to Bristol and York down the Severn and Trent, 8000 tons more; besides great quantities shipped at Chester and Liverpool for Ireland and Scotland. The commodities, besides the cheese already mentioned, are salt, corn, cattle, sheep, fish, particularly salmon, (which is very fine,) fowls, and other articles of provision. The market-towns are Nantwich, Middlewich, Northwich, Macclesfield, Congleton, Malpas, Frodsham, Knotsford, Altringham, Halton, Sandbach, and Stockport. It sends 4 members to parliament, 2 for the county, and 2 for the city of Chester. The principal rivers are, the Mersey, Weaver, Dee, and Dane; and it has several lakes.

CORNWALL is a maritime county, situate at the western extremity of the island, and bounded on the S. the W. and N. by the sea, and on the E. by the river Tamar, which divides it from Devonshire. Its length from E. to W. is about 80 miles; its greatest breadth from S. S. E. to N. N. E. is 48 miles, though in one place it is not above 14 miles wide, the peninsula of which the county consists growing narrower by degrees from Devonshire to the Land's End. However, it is 150 miles in circumference. It is in the diocese of Exeter and province of Canterbury, and is divided into 9 hundreds; in which are contained 213 parishes. There are here 37 market-towns, of which Bodmyn, Camelford, Fowey, St. Germain's, Gramport, Helston, St. Ives, Kellington, Launceston, Liskard, East Looe, Penryn, Saltash, Tregony, and Truro, are boroughs, and send two members each

to parliament; besides St. Austle, Boscastle, St. Columb, Falmouth, Market Jew, Padstow, Penzance, and Stratton, which send no members.—There are also six other boroughs, which send each two members to parliament, but are not market-towns, namely, Bossiney, West Looe, Lestwithiel, St. Maws, St. Michael, and Newport. This county is mountainous in the middle, and these mountains form a kind of broken chain throughout the whole length of the county. On each side this high ridge, the land has a plainer surface, but is rather more hilly on the north than on the south. This ridge intercepts the rain, and fogs and dews fall down from it in plentiful streams towards the sea-coast; so that, upon the whole, the earth is no where better watered than in this county. Cornwall being a peninsula, almost surrounded by the sea, we cannot expect the air to be free from exhalations; therefore it is no wonder they seldom have a dry summer. The rains, however, are rather frequent than heavy; nor is it ever so cloudy but the sun will break out one part or other of the day; which may be owing to the hilly, narrow, ridge-like form of the county, over which the winds have a quick and short passage, and do not suffer the clouds to hang long in one place. The sea-air is pernicious to plants, in proportion to their tenderness or strength, and the force with which it is driven upon them. The winters here are much more mild than in any other part of England, insomuch that myrtles will always grow, without being put into green-houses. They never have any great hail-storms, nor will the snow lie upon the ground above three or four days. The spring is always very early, as appears from the buds and blossoms. However, the summers, though Cornwall lies so far to the south, are never very hot, on account of the sea-breezes blowing towards the land. It has plenty of sea-herbs, and some other plants peculiar to its insular situation. The mines of tin are numerous, and are, in general, very rich in ore: these have rendered this county famous in all ages. There has been sometimes found a small quantity of gold and silver, but not worthy of notice. The copper-mines are also numerous and rich in ore. In many cavernous parts of the rocks are found transparent crystals, called Cornish diamonds, they being very brilliant when polished. The principal rivers are, the Tamar, Seaton, Loo or East Loo, Fawey or Fowey, Fal, Hel, Lo or Low, Hey, Alan, Laine, and the Lerwyn. It sends 42 members to parliament.

CUMBERLAND is a maritime county, bounded on the N. by Scotland, and part of Northumberland; on the W. by the Irish sea; on the S. by Lancashire, and on the E. by Westmoreland, Durham, and Northumberland. It is 58 miles in length, and 30 in breadth, where broadest, though in some places it is very narrow, and 168 miles in circumference. It lies in the diocese of Chester and Carlisle, is divided into 5 wards, contains 1 city, 10 market-towns, and 103 parishes. The air is cold and piercing,

yet less so than might be expected, from its being situated so far north. The mountains feed large flocks of sheep, whose flesh is particularly sweet and good, and the vallies produce corn, &c. There are mines of coal, lead, copper, lapis calaminaris, and black-lead; the latter of which is almost peculiar to this county, which contains more than sufficient to supply all Europe. The Skiddaw is the principal mountain. The lakes in Cumberland are the Derwent-water, Bassingthwaite-water, Buttermere-water, Cromack-water, Lowes-water, Uls-water, West-water, Ennerdale-water, Elder-water, Broad-water, &c. The principal rivers are, the Derwent, Eden, Eln, Esk, Leven, Irthing, South Tyne, Peterel, and the Caude. Carlisle is the capital, and is situate above a rich tract of meadows, bordering the Eden and two other rivers, which here unite their streams. The gates of this city are called the English, Irish, and Scotch gates. It has a castle on the west side of the town; and the cathedral is a stately structure: it has also a very considerable manufacture of printed linens and checks, and is noted for the making of whips and fish-hooks. Carlisle was taken by the rebels in 1745, but retaken by the Duke of Cumberland. The chief towns are, Penrith, Brampton, Cockermouth, Whitehaven, Egremont, Ravenglass, and Ireby. Carlisle is governed by a mayor, sends two members to parliament, and is 60 miles south of Edinburgh. Cumberland sends 6 members to parliament.

DERBYSHIRE is an inland county, bounded on the north by Yorkshire, on the east by Nottinghamshire, on the south by Leicestershire and Warwickshire, on the west by Staffordshire, and on the north-west by Cheshire. It extends 59 miles from north to south, and 34 from east to west, where broadest, but in the south part it is not above 6. It is 164 miles in circumference. It lies in the diocese of Litchfield and Coventry, sends 4 members to parliament, and contains 6 hundreds, 11 market-towns, and 138 parishes. The air, especially on the east side, is wholesome and agreeable; but in the Peak, toward the north, it is sharp and cold. The hills in the northern part, by attracting the passing clouds, cause the rain to descend there in greater abundance than in the circumjacent counties. The south and east parts are pleasant and fertile, producing most kinds of grain, particularly barley; even the north-west part, called the Peak, is abundantly rich; for the bleak mountains abound in the best lead, with marble, alabaster, mill-stones, iron, coal, and a coarse sort of crystal; and the intermediate vallies are fruitful in grass. The barytes, or ponderous earth, which seems to be the medium substance between earth and ores, is found in great quantities. The principal rivers are, the Derwent, Dove, Erwash, Trent, and Crawlow. Derby is the county-town, and situated on the river Derwent, over which is a handsome stone bridge. It has five churches, the chief of which (named All-Saints) is noted for its

beautiful tower. In 1734, a machine was erected here by Sir Thomas Lombe, for the manufacturing of silk, the model of which was brought from Italy. It was the first of its kind erected in England; and its operations are, to wind, double, and twist the silk, so as to render it fit for weaving. It also possesses manufactures of silk, cotton, and fine worsted stockings; and has a fabric of porcelain, equal, if not superior in quality, to any in the kingdom. Derby sends two members to parliament, and is governed by a mayor, 11 aldermen, and other officers. The rebels came as far as this town in the year 1745, and then returned to Scotland. The principal market-towns are, Chesterfield, Wirksworth, Ashburn, Bakewell, and Buxton.

DEVONSHIRE is a maritime county, bounded on the north and north-west by the Bristol Channel, on the east by Somersetshire and Dorsetshire, on the south and south-east by the English Channel, and on the west by Cornwall. It is 70 miles long, and 64 broad; it lies in the diocese of Exeter; contains 32 hundreds, 35 market-towns, and 465 parishes; and sends 26 members to parliament. The air is healthful in the vallies, and so mild that the myrtle grows unsheltered; but it is cold and bleak on the mountains. The soil is various, for the lower grounds are naturally fruitful, and the hills barren. In the eastern parts there is plenty not only of good corn, but of fine pasturage for sheep, where the grounds are dry and chalky. The southern part of the county is remarkably fertile, and there are great numbers of fruit-trees, especially apples, with which a great quantity of cider is made. On the coast is found plenty of a peculiarly rich sand, which is of singular service to husbandmen; and those who live at a distance from the sea purchase it to improve their poor lands. The western parts abound with game, especially hares, pheasants, and woodcocks, which are in such abundance as to render them very plentiful; and here is a bird so small, that it is reputed a humming bird, and, like that, constructs its nest on the extreme branches of trees. In the south-west parts are great quantities of marble, and in many places marble rocks are found to be the basis of the high-road. The principal rivers are, the Tamar, Ex, Teigne, and Dart. Exeter is the principal city, and is situated on the Ex, from which it takes its name, over which is a handsome stone bridge. It was formerly the seat of the Saxon kings, who resided in the castle, and is encompassed with a wall, in which are six gates, in good repair. There are 15 parish churches, and 4 chapels of ease, besides the cathedral, which is a magnificent fabric. Ships of burden formerly came up here; but the navigation was almost destroyed by Henry Courtney, earl of Devon, and, though repaired, could not be restored to its former state: its port, therefore, is at Topsham, five miles below. It has 13 companies of tradesmen, manufactures of serges, and other woollen goods, and a share in the

fisheries of Newfoundland and Greenland. It is governed by a mayor, recorder, 24 aldermen, &c. and sends two members to parliament; and is 68 miles south-west of Bristol. The market-towns are, Plymouth, Barnstaple, Biddeford, Tiverton, Honiton, Dartmouth, Tavistock, Holdsworthy, Hatherleigh, Torrington, Oakhampton, Bow, Crediton, Chumleigh or Chimleigh, Moreton, Hampstead, Plymton, Modbury, Kingsbridge, Totness, Brent, Ashburton, Chudleigh or Chidleigh, Beerhalston, &c.

DORSETSHIRE is a maritime county, extending 50 miles in length, 30 where broadest, and is 150 miles in circumference; it is bounded on the north by Somersetshire and Wiltshire, on the east by Hampshire, on the south by the English Channel, and on the west by Devonshire and Somersetshire. It lies in the diocese of Bristol, sends 20 members to parliament, and contains 9 hundreds, 24 market-towns, and 465 parishes. The air on the hills is somewhat bleak and sharp, but very mild and pleasant near the coast. The soil is generally rich and fertile, though in some parts very sandy: the northern part, which is divided by a range of chalk hills from the southern, affords good pasturage for cattle; while the southern part, chiefly consists of fine downs, and feeds incredible numbers of sheep. The chalk hills, which run through every county from the south-east part of the kingdom thus far, terminates at the further extremity of this. The principal rivers are the Stour, Frome, Piddle, Liddon, Derelish, and Allen. Here is plenty of poultry of all sorts; swans, woodcocks, pheasants, partridges, fieldfares, &c. The products are corn, wool, hemp, fine stone, and some marble. It is also distinguished for its woollen manufactures. Dorchester is the county town, and is of great antiquity; was formerly a city, and much larger, the ruins of the walls being still to be seen in some places. It has three churches, sends two members to parliament, and is governed by a mayor, &c. and is seated on the river Frome.—The chief towns are, Dorchester, Lyme, Sherborn, Shaftesbury, Pool, and Blandford.

DURHAM is a maritime county, commonly called the bishopric of Durham; bounded on the north by Northumberland, on the east by the Grecian Ocean, on the south and south-west by by Yorkshire, and on the west by Westmoreland and Cumberland. It extends 47 miles in length, and 37 in breadth, and is above 150 miles in circumference; contains 1 city, 9 market-towns, and 74 parishes, and sends four members to parliament. The air is wholesome, and though very sharp in the western parts, is milder towards the sea, whose warm vapours mitigate the severity of the winter seasons. The soil is very various; the west side being mountainous and barren, while the east and south consist of beautiful meadows, woods, and corn fields. Immense quantities of coal, lead, and iron, are found in the bowels of the earth. The principal rivers are, the Wear,

Tees, Tyne, and Derwent. Durham is the capital of the bishopric, and pleasantly and commodiously seated on an easy ascent, and almost surrounded by the river Wear, over which there are three large stone bridges. It is surrounded by a wall, and has a castle, now the bishop's palace, seated on the highest part of the hill; it contains 6 parish churches, besides its cathedral, which is a large and magnificent edifice. It is a bishop's see, and sends 2 members to parliament; and is 14 miles south of Newcastle. The market-towns are, Stockton, Hartlepool, Sunderland, Darlington, Staindrop or Stainthorp, Bishop's Aukland, and Bernard Castle.

ESSEX is a maritime county, and in the diocese of London; 54 miles long, and 48 broad; bounded on the north by Cambridgeshire and Suffolk, on the east by the German Ocean, on the south by Kent, and on the west by Herts and Middlesex; it contains 20 hundreds, 27 market-towns, 406 parishes, and sends 8 members to parliament; it also possesses a variety of soil and face of country. Its south-west part is occupied principally by the two forests of Epping and Hainault; and is noted for its butter, which is sold at a high price in London, under the name of Epping butter. The north-west part, from Saffron Walden to Cambridge, is famous for the growth of saffron, which is almost peculiar to this district, and is allowed to be the best in the world. The middle part is a fine corn country. The part bordering on the Thames and the sea consists chiefly of marshy grounds, which afford excellent pasturage, yet are deemed unwholesome and aguish. The principal rivers are, the Thames, Blackwater, Coln, Chelmer, Stour, Crouch, and Roding. Chelmsford is the county town, but Colchester is the largest and most famous, and is a place of great antiquity. It had 16 parish churches, but now only 12 are used. Most of them were damaged Cromwell's time. It was lately a corporation, but lost its charter by some misdemeanour; however, it still sends 2 members to parliament. The other principal towns are Harwich, Malden, and Braintree.

GLOUCESTERSHIRE is an inland county, 60 miles in length, and 26 in breadth; bounded on the west by Herefordshire and Monmouthshire, on the north by Worcestershire, on the east by Warwickshire and Oxfordshire, and on the south by Wiltshire and Somersetshire. It contains 28 hundreds, 2 cities, 25 market-towns, and 338 parishes; and sends 8 members to parliament. Its air is generally good, and the soil is extremely fruitful. The staple commodities of the county are its woollen cloth and cheese. Its principal rivers are the Severn, the Warwickshire Avon, the Lower Avon, the Wye, Thames, Coln, and Lech. Gloucester is the capital, and is seated on the east side of the river Severn, where, by two streams, it makes the Isle of Alney. It is large and well inhabited: it once contained 11 churches, but now has only five, besides the cathedral of St. Peter, which is a handsome

structure, and remarkable for its large cloister, and whispering gallery; the tombs of Robert duke of Normandy, eldest son of William the Conqueror, and the unfortunate Edward II. It has 5 hospitals, 2 free-schools, and a county gaol; and was fortified with a wall, which Charles II. after the Restoration, ordered to be destroyed. It is governed by a mayor, who is also the recorder, 12 aldermen, a number of common-council, &c. Great quantities of pins are made here, and here are twelve incorporated trading companies. The chief market-towns are, Tewkesbury, Cirencester, Cheltenham, Campden, and Stow.

HAMPSHIRE is a maritime county, bounded on the north by Berks, on the east by Surry and Sussex, on the south by the English Channel, on the west by Dorsetshire and Wilts. It extends, exclusive of the Isle of Wight, 42 miles from north to south, and 38 from east to west. It contains 10 hundreds, 1 city, 20 market-towns, and 311 parishes, and sends, with the Isle of Wight, 26 members to parliament. It is one of the most agreeable, fertile, and populous, counties in England. The commodities are, corn, barley, hops, bacon, honey, and timber; the last in particular, on account of its great woods, of which the principal are the New Forest, (in making of which William the Conqueror destroyed 36 churches,) and the Forest of East Bere. The principal rivers are, the Avon, Test, Itchen, and Stour. Southampton is the county-town, and is situate between the rivers Itchen and Test. It contains 5 churches, is surrounded by walls and several watch-towers, and had a strong castle, but it is now in ruins. It is a fashionable place of resort for sea-bathing; and it was on this beach that the Danish king Canute gave that striking reproof to his flattering courtiers, when the disobedient tide washed his feet. A small distance from this town is Woodmills, where is a very curious manufacture of ship blocks, from which all the king's dock-yards are supplied. The assizes are held at Winchester, which was a place of great note in the time of the Saxons. The other chief towns are Portsmouth, Andover, Basingstoke, and Christchurch.—Cowes, Newport, Yarmouth, Newton, and Ride, are in the Isle of Wight, which is included in Hampshire.

HEREFORDSHIRE is an inland county, 40 miles long, and 35 broad; bounded on the east by Gloucestershire and Worcestershire, on the west by Radnorshire and Brecknockshire, on the north by Shropshire, and on the south by Monmouthshire. It contains 11 hundreds, 1 city, 13 market-towns, and 221 parishes; and sends 8 members to parliament. The air is very good, and the soil fruitful, especially in the vales. Apples grow in greater abundance here than in any other county, being plentiful even in the hedge rows. The sheep of Herefordshire are small, affording a fine silky wool, in quality approaching to the Spanish. It is noted for wool and cider, which last is transported all over

England. The principal rivers are the Wye, Mynnow, and Lug. Hereford is the capital, and is a bishop's see.

HERTFORDSHIRE is an inland county, about 36 miles long, and 28 broad; bounded on the north by Cambridgeshire, on the east by Essex, on the north-west by Bedfordshire, on the west by Bucks, and on the south by Middlesex. It contains 8 hundreds, 19 market-towns, and 134 parishes; and sends 6 members to parliament. It abounds in corn, river-fish, sheep, and fat cattle, and the air is good all over the county. The principal rivers are, the Lea, Stort, Coln, Gade, Bean, and the Rib. Hertford is the county town.

HUNTINGDONSHIRE is an inland county, and in the diocese of Lincoln; 25 miles in length, and 20 in its broadest parts; bounded on the north and north-west by Northamptonshire, on the east by Cambridgeshire, and on the south-west by Bedfordshire. It contains 4 hundreds, 6 market-towns, and 106 parishes. The principal rivers are, the Ouse, Nen, and the Cam, which last divides it from Cambridgeshire. The air is good, except the fenny parts, which are aguish. Its chief commodities are, corn, malt, and cheese; and it fattens abundance of cattle. This county sends 4 members to parliament; and the sheriff, who is chosen alternately from Cambridge, the Isle of Ely, and Huntingdonshire, is sheriff of both counties. Huntingdon is the county town, 16 miles W. by N. of Cambridge.

KENT is a maritime county, and in the diocese of Canterbury and Rochester; bounded on the north by the Thames and the German Ocean, on the east and south-east by that Ocean and the Streights of Dover, on the south by Sussex and the English Channel, and on the west by Surry. From east to west it is 58 miles, and 36 in breadth. It is divided into 5 lathes, containing 62 hundreds, 2 cities, 28 market-towns, and 405 parishes; and sends 10 members to parliament. In the soil and face of the country there is a great diversity. The banks of the Thames are low and marshy, but backed by a range of chalky eminences, sometimes rising to a moderate height: this kind of hard chalky soil, inclining to barrenness, extends to the north-east extremity of the county, and thence round to Dover, exhibiting its nature in the lofty white cliffs, which here bound the island, and produce the striking appearance at sea, which gave it the name of Albion. This county produces, besides the usual objects of agriculture, large quantities of hops; fruit of various kinds, especially apples and cherries, of which there are large orchards; madder for dying; timber in the woody parts; and birch twigs for brooms, which form no inconsiderable article of traffic in the London markets. The principal rivers, besides the Thames, are the Medway, Darien, Stour, Cray, and Rother. The chief towns are, Maidstone, Canterbury, Chatham, Rochester, Greenwich, Woolwich, Bromley, Deal, Deptford, Sheer-

ness, and Queenborough (in the island of Sheppey,) and Dartford, Dover, Sandwich, Romney, and Hythe, are called Cinque Ports. Maidstone is the county town: but Canterbury and Rochester are the principal; the former of which is an Archbishop's see, the metropolitan of all England. The cathedral, a large structure, was once famous for the shrine of Thomas Becket, visited by pilgrims from all parts of Europe. This turbulent priest, having been murdered here in 1170, was afterwards made a saint: miracles were pretended to be performed at his tomb, and 100,000 pilgrims, visitors to this tomb, have been registered at one time in Canterbury, where the devotion to him had quite effaced the adoration of God, and even of the Virgin. At the altar of God, for instance, there was offered in one year, 3l. 2s. 6d.; at the Virgin's, 63l. 5s. 6d.; at St. Thomas's, 832l. 12s. 3d. The next year the disproportion was still greater; there was not a penny on God's altar; the Virgin gained only 4l. 1s. 8d.; but St. Thomas had got 954l. 6s. 3d. Lewis VII. of France made a pilgrimage to this tomb, and bestowed on the shrine a jewel, esteemed the richest in Christendom. But Henry VIII. in 1538, not only pillaged this rich shrine, but caused the saint to be cited in court, tried, and condemned as a traitor; ordering his name to be struck out of the calendar, his bones to be burnt, and his ashes thrown into the air. In this cathedral are interred Henry IV. and Edward the Black Prince. The city has 14 parish churches, the remains of many Roman antiquities, and an ancient castle, with walls and a deep ditch. This city possesses a share of the silk manufactures, introduced by the Walloons, who have here a church under the cathedral. [Walloons, a name formerly given to the inhabitants of Flanders, particularly those of Austrian and French Flanders.] Rochester is a bishop's see, and has, beside the cathedral, 3 parish churches. It has 2 free-schools, one called the King's, and the other the City School. Here is also an alms-house for six poor travellers, who are supplied with a supper, a bed, and a breakfast, with 4d. to carry them forward on their journey; but they are to stay no longer than one night; and an inscription over the door intimates, that Rogues and Proctors are excepted. It is 27 miles south-west of Canterbury.

LANCASHIRE is a maritime county, and in the diocese of Chester; bounded on the north by Cumberland and Westmoreland, on the east by Yorkshire, on the south by Cheshire, and on the west by the Irish Sea. It is 74 miles from north to south, (including a detached hundred on the north-west, called Furness, which is separated from the rest by a creek, at the head of Morecambe Bay,) and its greatest breadth is 44 miles. It is divided into 6 hundreds, containing 27 market-towns, and 69 parishes; and sends 14 members to parliament. It is a county palatine, under the title of the Duchy of Lancaster: the only duchy of England (that of Cornwall excepted) which is not merely titular.

The air, in general, is very healthful. This county comprises a variety of soil and face of country; but, upon the whole, is one of those which are the least favoured by nature. The hundred of Furness is a wild and rugged region, stored with quantities of iron-ore and slate, and covered with a growth of underwood, which is cut in succession, and made into charcoal. The east part, between the Ribble and the Mersey, comprising the ancient forests of Wyresdale and Bowland, is mountainous, and generally barren; but the south part of the tract between these rivers is flat, quite from the sea to the commencement of the ridge called Blackstone Edge, that separates this county from Yorkshire.—Much of this is a fertile country, though occasionally deformed by the black turf-bogs, here called mosses; some of which are of large extent, and impassable in wet seasons. In the north-east part of this division are some lofty hills, the most noted of which is Pendle-Hill. The remaining part is varied with hill, dale, and moor. Among its products is a species of coal, called Cannel, far exceeding all other, not only in making a clear fire, but for being capable of being manufactured into candlesticks, cups, standishes, snuff-boxes, &c. and of being polished so as to represent a beautiful black marble. Lancashire is little adapted for a corn country, not only from the nature of its soil, but from the remarkable wetness of its climate; the land, however, is singularly fitted to the growth of the potatoe. As a commercial and manufacturing county, it is distinguished beyond any other in the kingdom. Its principal manufactures are, linen, silk, and cotton goods; fustians, counterpanes, shalloons, bays, serges, tapes, small ware, hats, sail-cloth, sacking, pins, iron goods, cast plate-glass, &c. Of the commerce of this county, it may suffice to observe, that Liverpool is the second port in the kingdom. The principal rivers are, the Mersey, Irwell, Ribble, Lon, Levern, Wyre, Hodder, Roche, Duddon, Winster, Ken, and Calder; and it has two considerable lakes, Winander-mere, and Coniston-mere, the former of which is noted for an excellent fish, called the Char, which is not found any where else in England, but in the Ulder-water in Cumberland. The chief towns are, Lancaster the county town, Liverpool, Manchester, Preston, Wigan, Clithero, Warrington, Blackburn, and Newton. Lancaster is seated on the river Lon, or Lune, which here forms a port for vessels of moderate burden, and over which is a stone bridge of five arches. It has but one church, on the side of a hill, on the summit of which is the castle, (formerly John of Gaunt's,) serving both as the shire-house and the county-gaol. It is 68 miles south of Carlisle.

LEICESTERSHIRE is an inland county, and in the diocese of Lincoln; bounded on the north by Nottinghamshire, on the east by the counties of Lincoln and Rutland, on the south by Northamptonshire, on the south west by Warwickshire, and on

the north-west by Derbyshire. It extends 38 miles from east to west, and 30 from north to south; contains 6 hundreds, 12 market-towns, and 196 parishes; and sends 4 members to parliament. The air is extremely healthful. Its chief rivers are, the Avon, Soar, Wreke, Anker, and Welland. The soil in general affords great quantities of rich grazing land, and is peculiarly fitted for the culture of beans, for which it is proverbially noted. It has also valuable coal mines. This county is famous for its large black horses, and horned cattle, as well as for its sheep, which are of a very large size, without horns, and clothed with thick long flakes of soft wool. The manufacture of stockings is the principal one in the county. Malton-Mowbray, Loughborough, Lutterworth, Ashby-de-la-Zouch, and Market-Bosworth, are the chief towns, besides Leicester, which is the county town, and sends 2 members to parliament, and is governed by a mayor. It is seated on the river Soar, one of the bridges over which, called Bow-bridge, was long visited by the lovers of antiquity, on account of its having been the accidental monument over the grave of Richard III. but this bridge fell in the year 1791.—Leicester is 24 miles south-east of Derby.

LINCOLNSHIRE is a maritime county; bounded on the north by the Humber, which divides it from Yorkshire; on the east by the German Ocean; on the south-east by the Wash and part of Norfolk; on the south by Cambridgeshire and Northamptonshire; on the south-west by Rutlandshire; and on the west by the counties of Leicester and Nottingham. It is 75 miles long, and 45 broad. It is divided into three parts, namely, Holland on the S. E. Kesteven on the S. W. and Lindsey on the N. It contains 30 hundreds, 1 city, 31 market-towns, and 630 parishes; and sends 12 members to parliament. Its principal rivers are, the Humber, Trent, Witham, and Welland. The air is various, according to its three divisions. The soil in many places is very rich, the inland part producing corn in great plenty, and the fens cole-seed, and very rich pastures; whence the breed of cattle is larger than that of any other county in England, except Somersetshire; their horses are also excellent, and very large; their hunting hounds and hares are noted for their swiftness; and their sheep are not only of the largest breed, but are covered with a long thick wool, peculiarly fitted for the worsted and coarse woollen manufactures.—Lincoln is the capital; and is a bishop's see, the largest diocese in England. It is seated on the side of a steep hill, on the river Witham, which here divides into three streams. It had formerly 50 churches, now reduced to 13, beside the cathedral. The cathedral is admired for its interior architecture, which is in the richest and lightest Gothic style; and its great bell, called Tom of Lincoln, requires 12 men to ring it. Lincoln is governed by a mayor, and is 32 miles north-east of Nottingham.

MIDDLESEX is an inland county; bounded on the north by Hertfordshire, on the east by Essex, on the south by Surry and Kent, and on the west by Buckinghamshire. It is the least county in England, except Rutlandshire, being only 22 miles from east to west, and 17 from north to south: but it is far the richest. It contains 98 parishes, besides those in London and Westminster, has those 2 cities, and 6 market-towns; and sends 8 members to parliament. Next to London and Westminster the principal places are, Uxbridge, Brentford, Chelsea, Highgate, Hampstead, Kensington, Hackney, and Hampton-Court. The air is healthy, but the soil, in general, being gravelly, is not naturally fertile; though by means of their vicinity to the metropolis, many parts of it are converted into rich beds of manure, clothed with almost perpetual verdure. There are still, however, very extensive tracts of uncultivated heath. Beside the Thames, the Lea, and the Coln, which are its boundaries to the south, the south-east, and the west, Middlesex is watered by several small streams; one of which, called the New River, is artificially brought from Amwell, in Herts, for the purpose of supplying London with water. London is the capital, and the metropolis of the United Kingdom; one of the largest and most opulent cities in the world, mentioned by Tacitus as a considerable commercial place in the reign of Nero. In its most extensive view, as the metropolis, it consists of the city properly so called, the city of Westminster, and the borough of Southwark, besides the suburbs in Middlesex and Surry, within what are called the bills of mortality. London and Westminster are in Middlesex, on the north side of the river Thames; and Southwark is on the opposite bank, in Surry. The extent of the whole, from Limehouse and Deptford to Milbank, and Vauxhall, is above seven miles; but the greatest breadth does not exceed three. The city is divided into 26 wards, each governed by an alderman; and from the aldermen the lord mayor is annually chosen. There are likewise 236 common-council-men, a recorder, a common-serjeant, 2 sheriffs, (who are also sheriffs of Middlesex,) a chamberlain, a town-clerk, a city-remembrancer, a water-bailiff, and many inferior officers.—Westminster, once a mile from London, but now united to it, is governed by a high-steward, who is generally a nobleman chosen by the dean and chapter, and he has an under-steward who officiates for him. Next to him is the high-bailiff, chosen also by the dean and chapter., whose power resembles that of a sheriff. The suburbs are under the jurisdiction of the magistrates; and those of Middlesex, beside the county hall, on Clerkenwell Green, have an office in Bow-street, long distinguished for public spirit and activity, and seven other public offices. Southwark was long independent of London, but Edward III. granted it to the city It was then called the village of Southwark; and afterwards named the bailiwick. In the reign of Edward VI. it was formed

into a twenty-sixth ward, by the name of Bridge-ward Without. On the death of the alderman of this ward, he is succeeded by the next in seniority, to whatever ward he may belong; this ward being considered as a sinecure, and consequently the most proper for "the father of the city." The city has likewise a high bailiff and steward here. Among the churches in the metropolis, the cathedral of St. Paul is the most conspicuous, and inferior to none in Europe, except St. Peter's at Rome. This noble fabric is now destined to be the receptacle of the monuments of such illustrious men as may do honour to their country by their talents and their virtues. The first-erected monument was for that great philanthropist, Mr. Howard, and the second for Doctor Samuel Johnson. That for Lord Nelson is also placed here. Westminster Abbey is a noble specimen of Gothic architecture. Here most of the English sovereigns have been crowned, and many of them interred. It contains also a great number of monuments of kings, statesmen, heroes, poets, and persons distinguished by genius, learning, and science. The chapel of Henry VII. adjoining, Leland calls the wonder of the world. St. Stephen's, in Walbrook, is a church of exquisite interior beauty, the master-piece of Sir Christopher Wren. Bow Church, in Cheapside; St. Bride's, in Fleet-street; St. Dunstan's in the East; and St. Martin's in the Fields; are among the other churches most distinguished for fine architecture. The parish churches, in the bills of mortality, amount to 146; namely, 97 within the walls, 16 without the walls, 23 out-parishes in Middlesex and Surry, and 10 in the city and liberties of Westminster. Besides these churches, is one belonging to the Temple, a celebrated seat of law. It was founded by the Knights Templars in the reign of Henry II. upon the model of that of the Holy Sepulchre at Jerusalem. There are likewise a great number of chapels for the established church, foreign Protestant churches, Roman catholic chapels, meetings for dissenters of all persuasions, and three synagogues for the Jews. The royal palace of St. James's is an ancient building on the north side of a small park, mean in external appearance; but the apartments are said to be the best calculated for regal parade of any in Europe. The royal town-residence is a house at the west side of St. James's Park, built by the duke of Buckingham, and purchased by the king in 1761, when it received the appellation of the Queen's Palace, but is still frequently called Buckingham House. Carleton House, the residence of the Prince of Wales, to the east of St. James's Palace, is a stately building, on which vast sums have been expended, but is not yet completed. The Banqueting House at Whitehall, begun in 1619, is only a small part of the vast plan of a palace, intended to be worthy the residence of the British monarchs, but left incomplete. Beside the royal palaces, there are many fine houses of the princes of the blood, and of the nobility and gentry. Among the public buildings,

which can be merely enumerated here, are Westminster Hall, containing the supreme courts of justice, and adjoining to which are the houses of Lords and Commons; the Guildhall of the city; the Sessions House in the Old Bailey; the Tower of London, an ancient fortress, once a royal palace, now containing some public offices, a magazine and arsenal, the regalia of the kingdom, the mint, and a menagerie; the Horse Guards, the Treasury, and the Admiralty, at Whitehall; the noble collection of public offices which form that magnificent structure called Somerset Place; the Royal Exchange in Cornhill; the Bank of England, in Threadneedle-street; the Custom-House, in Thames-street; the Excise-Office, in Broad-street; the East India House, in Leadenhall-street; the South Sea House, in Throgmorton-street; the Mansion-House for the lord mayor; the Monument in commemoration of the great fire in 1666; the ancient bridge, called London Bridge; and the two magnificent modern bridges of Black Friars and Westminster. The British Museum in Great Russel-street, Bloomsbury; and Week's Museum, Titchborne-street, Haymarket; are perhaps the noblest of their kind in Europe. The Inns of Court for the study of the law; the colleges, learned societies, and public seminaries; the halls of the different trading companies; the noble hospitals and other charitable institutions; the prisons; the public places of diversion; with its fine squares and streets; all are too numerous to be here particularly mentioned.—Such, on a cursory view of it, is the metropolis of Great Britain, to the extent and opulence of which many causes have contributed. From the openness of the country round, especially on the London side, and a gravelly soil, it is kept tolerably dry in all seasons, and affords no lodgment for stagnant air or water. Its cleanliness, as well as its supply of water, are greatly aided by its situation on the banks of the Thames, and the New River, with many good springs within the city itself, farther contributes to the abundance of that necessary element. All these are advantages, with respect to health, in which this metropolis is exceeded by few. With regard to the circumstance of navigation, it is so placed on the Thames, as to possess every advantage that can be derived from a sea-port, without its dangers; and, at the same time, by means of its extensive river, enjoys a very large communication with the internal parts of the country, which supply it with all sorts of necessaries, and in return receive from it such commodities as they require. London is the seat of many considerable manufactures; some almost peculiar to itself, others in which it participates with the manufacturing towns in general. The most important of its peculiar manufactures is the silk-weaving, established in Spitalfields by refugees from France. A variety of works in gold, silver, and jewellery; the engraving of prints; the making of optical and mathematical instruments, are likewise principally or solely executed here, and some of them in greater

perfection than in any other country. The porter-brewery, a business of very great extent, is also chiefly carried on in London. To its port are likewise confined some branches of foreign commerce, as the vast East India trade, and those of Turkey and Hudson's Bay. Thus London has risen to its present rank of the first city in Europe, with respect to opulence; and nearly, if not entirely so, as to the number of inhabitants. Constantinople can alone dispute the latter with it. Its population, like that of all other towns, has been greatly over-rated, and is not yet exactly determined; but it is probable, that the residents, in London, Westminster, and Southwark, and all the out-parishes, do not fall short of 950,000. London is a bishop's see. To enumerate all the events by which it has been distinguished, would greatly exceed our limits; we shall only mention, therefore, the great plague in 1665, which cut off 90,000 people; and the dreadful conflagration in 1666, by which 13,000 houses were destroyed. It is 400 miles S. by E. of Edinburgh, 225 N. W. of Paris, 690 N. by W. of Madrid, 750 N. W. of Rome, 660 W. N. W. of Vienna, 334 S. E. of Dublin, and 190 W. S. W. of Amsterdam.

MONMOUTHSHIRE is bounded on the north by Herefordshire, on the east by Gloucestershire, on the south-east by the mouth of the Severn, and on the west and south-west by the counties of Brecknock and Glamorgan. It is 24 miles long, and 20 broad. It lies in the diocese of Llandaff; contains 6 hundreds, 7 market-towns, and 122 parishes; and sends three members to parliament. The air is temperate and healthy, and the soil fruitful, though mountainous and woody. The principal rivers are, the Rimney, the Ebwith, the Usk, and the great river Wye. It was formerly reckoned one of the counties of Wales; and from the names of its towns and villages, its mountainous rugged surface, and its situation beyond the Wye, which seems to form a natural boundary between England and Wales in this part, it certainly partakes mostly of the character of the latter country, though now comprehended in the civil division of the former. The higher ranks generally speak English, but the common people use the Welsh language. The manufacture of this county is flannels. Abergavenny, Chepstow, Caerleon, Newport, and Pontipool, are the chief towns, besides Monmouth, which is the county town, and is seated at the confluence of the rivers Wye and Mynnow. It contains two parish churches, one of which (Monk's Church) is a very curious structure. Here was born Henry V. who was called Henry of Monmouth. It sends 1 member to parliament, and is 21 miles west of Gloucester.

NORFOLK is a maritime county, and in the diocese of Norwich; bounded on the north and east by the German Ocean, on the west by Cambridgeshire and Lincolnshire, and on the south and south-east by Suffolk. It contains 32 hundreds, 1 city, 32 market-towns, and 724 parishes; and sends 12 members to par-

liament. The products vary according to the soil and situation. The lighter arable lands produce barley in great plenty; wheat is cultivated in the stronger soils, and turnips are more generally grown here than in any other county. The sheep are a hardy small breed, and much valued for their mutton. Its principal rivers are, the Ouze, Nen, Waveny, Yare, and Bure. The manufactures of Norfolk are, worsted, woollen, and silks. Norwich is the capital. It is surrounded by a wall, now much decayed, and seated on the river Yare, which runs through it, and is navigable to Yarmouth. It has 36 parish churches, besides the cathedral, some of which were formerly covered with thatch; two churches for the Flemings, some Dissenting meeting-houses, and a Roman Catholic chapel. It has a stately castle, on a hill, which is the shire-house and the county gaol. Here is also a city and a county hospital, a theatre-royal, and a lofty market-house of free-stone. The ancient dukes of Norfolk had a palace here, which is still in existence as a workhouse. Here also is a free-school, founded by Edward VI. and several other charitable foundations. Near this city are the ruins of the castle of Kett the tanner, by whose rebellion in the reign of Edward VI. the city was reduced to a ruinous state. The other chief towns are, Yarmouth, Lynn-Regis, Thetford, Harleston, Reepham, Holt, North Walsham, and Castle Rising. This county is 77 miles, and 45 broad.

NORTHAMPTONSHIRE is an inland county, and in the diocese of Peterborough; about 60 miles long, and 22 broad; bounded on the south by Bucks and Oxfordshire, on the west by that county and Warwickshire, on the north-west by Leicestershire and Rutlandshire, on the north by Lincolnshire, and on the east by the counties of Cambridge, Huntingdon, and Bedford. It contains 20 hundreds, 1 city, 11 market-towns, and 304 parishes, and sends 9 members to parliament. The air is very healthy, except in the north-east part near Peterborough, which is the commencement of a fenny tract extending to the Lincolnshire Wash. With this single exception, Northamptonshire is said to contain less waste ground, and more seats of the nobility and gentry, than any other county. Its greatest defect is a scarcity of fuel, which is but scantily supplied by its woods; and though coal is brought by the river Nen, it is at a very dear rate. This county, however, possesses some considerable remains of its old forests, particularly those of Rockingham on the north-west, and of Salcey and Whittlebury on the south. Its products are the same with those of other farming counties; but it is peculiarly celebrated for grazing land. Horned cattle, and other animals, are fed to extraordinary sizes; and many horses of the large black breed are reared.—Woad for the dyers is cultivated here; but the county is not distinguished for manufactures. The principal rivers are, the Nen and Welland; besides which, it is partly watered by the Ouze, Leam, Cherwell, and Avon. Peterborough, Daventry, High-

nam Ferrers, Brackley, and Oundle, are the principal towns, besides Northampton, the county-town, which is seated on the river Nen. It is a handsome town, has a spacious market-place, and had seven churches, which are now reduced to four. It was almost entirely destroyed by fire in 1675, but was soon rebuilt; it has a good free-school, and a county infirmary and gaol. In the meadows below the town, a battle was fought in 1460, between Henry VI. and the Yorkists, in which the former was defeated and made prisoner; and near it is a fine Gothic structure, called Queen's Cross, erected by Edward I. in memory of his queen Eleanor. This town is 30 miles south-east of Coventry.

NORTHUMBERLAND is a maritime county, and in the diocese of Durham; it received its name from being situate north of the Humber. In the Saxon heptarchy it was a part of the kingdom of the Northumbrians, which contained also the counties of York, Lancaster, Durham, Cumberland, and Westmoreland. It forms the north extremity of England, and is bounded on the east by the German Ocean, on the south by the bishopric of Durham, on the south-west and west by Cumberland, and on the north-west and north by Scotland, from which it is separated by the Tweed. It extends 64 miles from north to south, and 50 from east to west; contains 10 market-towns, and 83 parishes; and sends 8 members to parliament. The air is healthful, and the soil is various; the east part fruitful in most sorts of corn, with rich meadows on the banks of the rivers; but the west part is mostly heathy and mountainous. The principal rivers are, the Tyne, Tweed, and Coquet. Alnwick is the county-town, but the largest is Newcastle; the former is the seat of the duke of Northumberland; besides which there are Tinmouth, Morpeth, and Hexham, considerable towns. Newcastle is a large borough and sea-port, situate between the Picts Wall and the Tyne. The river is so deep, that ships under 400 tons burden may come up to the town, though the large colliers are stationed below at Shields. The town may be considered as divided into two parts, of which Gateshead, on the Durham side, is one; and both were joined by a stone bridge, which,originally consisted of 12 arches; but by the embankment of the river to form the quays on the north side, they were reduced to nine. In 1771, a dreadful flood carried away four of these arches, with some houses that stood upon them; and this part of the bridge was rebuilt in 1779. Through this place went part of that wall which extended from sea to sea, and was built by the Romans to defend the Britons against the incursions of the Picts. The town is defended by a strong wall, in which are seven gates, and as many turrets, with several casements, bomb-proof; but the castle is old and ruinous. Here is a noble exchange; and the wall of the town, running parallel with the river, leaves a spacious piece of ground between the water and wall, which, being faced with freestone, forms the longest and

largest quay in England, except that at Great Yarmouth. Here are four parish churches, besides one at Gateshead: and among the other public buildings, is a mansion-house for the mayor; a hall for the surgeons; a large hospital, built by the contribution of the keel-men, for the maintenance of the poor of their fraternity; and several charitable foundations, situate in the centre of the great collieries, which have for centuries supplied London, and most of the southern counties, with coal. It also possesses manufactures of steel, iron, glass, and woollen cloth; and exports large quantities of lead, salt, salmon, butter, tallow, and grindstones. Newcastle was made a borough by William I. and the first charter for digging coal was granted by Henry III. in 1239. It is 34 miles south of Alnwick, 94 miles north of York, and 271 miles north by west of London.

NOTTINGHAMSHIRE is an inland county, and in the diocese of York; 48 miles long, and 20 broad; bounded on the north by Yorkshire and Lincolnshire, on the east by the latter county, on the south by Leistershire, and on the west by Derbyshire. It contains 7 hundreds, 9 market-towns, and 208 parishes; and sends 8 members to parliament. It enjoys such a temperature of soil and climate, as to render it one of the most fertile and pleasant counties in England. The principal rivers are the Trent and Idle. Almost the whole of the middle and western parts of the county were formerly occupied by the extensive forest of Sherwood, which is the only royal forest north of the Trent; but the wood has in many parts been cleared, and the extent of the forest much contracted. Its chief products are coal, of which there are great plenty; a kind of stone, somewhat like alabaster, but no so hard, which, when burnt, makes a plaster exceeding hard; and with this the inhabitants generally lay the floors of their upper rooms, instead of boarding them: its other commodities are malt, wool, and wood. The manufactures chiefly consist of framework-knitting, glass, and earthenware. Newark, East Redford, Southwell, and Mansfield, are the chief towns, besides Nottingham, the county-town which is situate on a rocky eminence, crowned by its castle, a magnificent modern structure, belonging to the duke of Newcastle, and built on the side of an ancient fortress, celebrated in English history; it is a populous and handsome town, and distinguished by its spacious market-place: it is one of the principal seats of the stocking manufacture, particularly of the finer kinds, as those of silk and cotton; and has also a manufacture of coarse earthenware; it has three parish churches, and several meeting-houses for Dissenters: and it is remarkable for its vaults, or cellars, cut into the rock. At this town Charles I. set up his standard, at the commencement of the civil war, which terminated in his destruction. Nottingham is governed by a mayor, recorder, 6 aldermen, 2 sheriffs, 18 common-council, 2 chamberlains, and 2 coroners.

OXFORDSHIRE is an inland county; bounded on the east by Buckinghamshire, on the west by Gloucestershire, on the south by Berkshire, and on the north by Warwickshire and Northamptonshire. Its extreme length is 48 miles, and its greatest breadth 26: it contains 14 hundreds, 1 city, 12 market-towns, and 219 parishes; and sends ten members to parliament; 2 for the city, 2 for the university, 2 for the county, and 4 for the other boroughs. The air is sweet, mild, pleasant, and healthy; for which reason it contains several gentlemen's seats; and the soil, though various, is fertile in corn, in grass, and the hills yield ochre, pipe-clay, and other earths, useful for various purposes. The greatest want in this county is that of fuel; for the woods, with which it once abounded, being greatly diminished, it is necessary to supply the deficiency with coal, brought by a long and troublesome navigation from London. Oxford is the capital. It is a bishop's see, and an university; and, besides the cathedral, has 13 parish churches. It is seated at the confluence of the rivers Thames and Cherwell, and, with the suburbs, is of a circular form, three miles in circumference. The university is said to have been founded by the great Alfred, but is generally supposed to have been a seminary of learning before his time, although it owed its revival and consequence to his liberal patronage, receiving from him grants of many privileges, and large revenues. Here are 20 colleges and 5 halls, several of which stand in the streets, and give the city an air of magnificence. The colleges are provided with sufficient revenues for the maintenance of a master, fellows, and students. In the halls the students live, either wholly or in part, at their own expence. The colleges are University, Baliol, Merton, Exeter, Oriol, Queen's, New, Lincoln, All Souls, Magdalen, Brazen Nose, Corpus Christi, Christ Church, Trinity, St. John Baptist's, Jesus, Wadham, Pembroke, Worcester, and Hertford. Of these, the most ancient is University College, founded before the year 872: and to Christ Church College, begun by Cardinal Wolsey, and finished by Henry VIII. belongs the cathedral. The halls are, Alban, Edmund, St. Mary, New Inn, and St. Mary Magdalen. Among the libraries in the university, the most distinguished is the Bodleian, founded by Sir Thomas Bodley; those of All-Souls College, Christ Church, Queen's, New St. John's, Exeter, and Corpus Christi. Among the other public buildings, are the Theatre, the Ashmolean Museum, the Clarendon Printing-Office, the Radcliff Infirmary, and an Observatory. At Oxford, king John, compelled by his barons, summoned a parliament to meet, in 1208; the proceedings of which were so disorderly, that it was known afterwards by the name of the mad parliament. Charles I. assembled a parliament here, 1625, in consequence of the plague then raging in London; and, in 1644, he summoned such of the members of both houses as were devoted to his interests; these were seceders from the parliament then sitting at West-

minster. The city was distinguished for its attachment to that unfortunate king, who here held his court during the whole civil war. It is governed by a mayor and aldermen, and is 20 miles south-west of Buckingham. Besides Oxford, the principal towns are, Banbury, Burford, Witney, Woodstock, Henley, and Tame.

RUTLANDSHIRE is an inland county, and the smallest in England, being only 15 miles long, and 11 broad. It is supposed to have received its name from the red colour of the soil, which in some parts is a sort of ruddle. It is bounded on the west and north-west by Leicestershire, on the north and north-east by Lincolnshire, and on the south and south-east by Northamptonshire. It lies in the diocese of Peterborough; contains 52 parishes and 2 market-towns, and sends 2 members to parliament. The air is very good, and the soil rich. The principal rivers are the Welland, and the Guash or Wash. Oakham is the county-town. The other market-town is Uppingham.

SHROPSHIRE is an inland county; is 50 miles long, and 40 broad; bounded on the north by Cheshire, on the east by Staffordshire, on the south-east by Worcestershire, on the south by Herefordshire, on the south-west by Radnorshire, and on the west by the counties of Montgomery and Denbigh. It contains 13 hundreds, 17 market-towns, and 226 parishes; and sends 12 members to parliament. The air is salubrious, and not very sharp, except on the hills: the soil is generally fruitful, especially on the north and east parts, which produce plenty of wheat and barley; but the south and west being mountainous, are less fertile, yet yield sufficient pasture for sheep and cattle. This county abounds with lead, copper, iron, limestone, freestone, pipe-clay, bitumen, and coal. The principal rivers are the Severn and the Tend. The principal towns are, Ludlow, Bridgenorth, Wenlock, Bishop's Castle, Whitchurch, Wem, and Newport; besides Shrewsbury, the capital, which is seated on a peninsula formed by the Severn, over which are two bridges, and is surrounded by a wall, with three gates; it contains five churches, and is governed by a mayor, a recorder, 12 aldermen, 24 common-council, and a town-clerk: it is also the chief mart for a coarse kind of woollen cloth, made in Montgomeryshire, called Welsh webs, and for all sorts of Welsh commodities, which are generally bought in a rough state at Welshpool, and finished here. In 1283, Edward I. held a parliament here, when the lords sat in the castle, and the commons in a barn. Another parliament was held here in 1397, by Richard II. Near this town, in 1403, was fought the battle between Henry IV. and Henry Piercy, nicknamed Hotspur, in which the latter was defeated and slain. Shrewsbury is 18 miles east of Welshpool, and 36 west of Litchfield.

SOMERSETSHIRE is a maritime county; 65 miles long, and 45 broad; bounded on the north-west by the Bristol Channel, on the north by Gloucestershire, on the east by Wiltshire, on the

south-east by Dorsetshire, and on the south-west by Devonshire. It contains 42 hundreds, 2 cities, 28 market-towns, and 475 parishes; and sends 18 members to parliament. The air in the lower ground is universally mild; and the soil in the north-east quarter is generally stony, and possesses a lofty mineral tract called the Mendip Hills. On the west side are the Quantock Hills, with many downs and open heaths; and in the north-west corner is the black sterile region of Exmoor. The south part, towards Dorsetshire, is high, but well cultivated: and throughout the county, especially in its south-west quarter, vales of the greatest fertility are interspersed. The principal rivers are, the Parret, Ivel, Thone, Brent, and Avon. The Mendip Hills afford abundance of coal, lead, calamine, copper, manganese, bole, and red ochre. Cattle, nearly equal in size to the Lincolnshire, are fed in fine meadows about the head of the Parret. Cider is a common product of this county; and it has a considerable share in the woollen manufactures. The chief towns are, the cities of Bath, Wells, and Bristol; Taunton, Bridgewater, Ilchester, Minehead, Milburn Port, and Glastonbury. Bristol is the capital. It is seated at the confluence of the river Avon with the Frome, ten miles from the influx of the Avon into the Severn.—The tide, rising to a great height in these narrow rivers, brings vessels of considerable burden to the quay, which extends along the inner shores of the Frome and Avon; but, at low water, they lie aground in the mud. It has 18 churches, besides the cathedral, a bridge over the Avon, a custom-house, and an exchange. Bristol has a prodigious trade; for it is reckoned that hence 2000 ships sail yearly. Here are no less than 15 glass-houses; and the sugar refinery is one of its principal manufactures. It is governed by a corporation; and is 12 miles W. N. W. of Bath.

STAFFORDSHIRE is an inland county, 55 miles long, and 42 broad; bounded on the west by Shropshire, on the north-west by Cheshire, on the north-east and east by Derbyshire, on the south-east by Warwickshire, and on the south by Worcestershire. It lies in the dioceses of Litchfield and Coventry; contains 5 hundreds, 1 city, 19 market-towns, and 139 parishes; and sends 10 members to parliament. The principal rivers are the Trent, Dove, Sow, Churnet, Stour, Peak, and Manyfold. The air is mild and wholesome: the soil in the south part is good and rich, though not without heaths, which take up a large tract of ground; it abounds in coal and iron. There is also good stone-quarries, plenty of alabaster, and limestone. This county is famous for its potteries, and for its canal, (Grand Trunk, or Staffordshire canal,) a work begun in 1766, under the direction of a Mr. Brindley, in order to form a communication between the Mersey and the Trent, and, of course, between the Irish Sea and the German Ocean. Its length is 92 miles; namely, 31 miles on the north side, from Harecastle-Hill, where it was begun, to the

duke of Bridgewater's canal at Preston on the Hill, in Cheshire, and 61 miles from the south side of the hill to Wildon Ferry, in Derbyshire, where it communicates with the Trent. To effect this work, 40 locks were constructed on the south side, there being 316 feet fall. On the north side there is only one lock, which is near Middlewich, and is 14 feet wide. The canal is 29 feet broad at the top, 26 at the bottom, and the depth 4 feet and a half. It is carried over the river Dove, in an aqueduct of 23 arches, and the ground is raised above a mile to a considerable height: it is also carried over the Trent by an aqueduct of 6 arches. At Harecastle Hill, it is conveyed under ground 2880 yards; at Barton, in Cheshire, a subterraneous passage is effected of 560 yards in extent; and, in the same neighbourhood, another of 350; at Preston on the Hill, where it joins the Duke's Canal, it passes under ground 1241 yards. From the neighbourhood of Stafford; a branch is made from this canal, to run over Wolverhampton, and to join the Severn near Bewley: from this again two other branches are carried, one to Birmingham, the other to Worcester. Mr. Brindley died in 1772, and left this canal to be finished by his brother-in-law, Mr. Henshall, who completed it in 1777. Stafford is the county town; besides which the chief towns are, the city of Litchfield, Newcastle-under-line, Tamworth, Wolverhampton, and Burton-upon-Trent.

SUFFOLK is a maritime county, 58 miles long, and 28 broad; bounded on the west by Cambridgeshire, on the north by Norfolk, on the south by Essex, and on the east by the German Ocean. It lies in the diocese of Norwich; contains 21 hundreds, 29 market-towns, and 510 parishes; and sends 16 members to parliament. The air is clear and healthy; the soil is of various qualities, but the country in general level. That near the shore is sandy and full of heaths, yet abounds in rye, pease, turnips, carrots, and hemp, with numerous flocks of sheep. High Suffolk, or the Woodlands, which is in the inland part, has a rich deep clay and marl, that yield good pasture, on which feed abundance of cattle. That part of the confines of Essex and Cambridgeshire affords also excellent pasture. The farmers are opulent and skilful; and have an excellent breed of draught horses. The principal rivers are the Stour, Waveney, Little Ouze, Lark, Deben, Gipping, and Orwell. Ipswich is the county town; besides which the principal towns are, Bury St. Edmunds, Sudbury, Aldborough, Eye, Orford, Lowestoff, Beccles, Dunwich, and part of Newmarket.

SURRY is an inland county, 36 miles long, and 23 broad; bounded on the north by Middlesex, on the east by Kent, on the south by Sussex, and on the west by Hampshire and Berks. It lies in the diocese of Winchester; contains 13 hundreds, 11 market-towns, (including Southwark,) and 140 parishes; and sends 14 members to parliament. The air is generally temperate and

healthy, and the soil is very different in the extreme parts from that in the middle, whence it has been compared to a coarse cloth with a fine border; for the edge of the county, on all sides, has a rich soil, extremely fruitful in corn and grass, particularly on the north and west towards the Thames; but it is far otherwise in the heart of the county, where are wide tracts of sandy ground and barren heath, and in some places long ridges of hills. It produces corn, box-wood, walnuts, hops, and fuller's earth. The principal rivers, besides the Thames, (which is the boundary of this county on the north,) are the Mole, Wey, and Wandle. The Lent assizes are held at Kingston, and the Summer assizes at Guildford and Croydon alternately; beside which, Southwark, Epsom, Richmond, Ryegate, Leatherhead, and Darking, are principal towns.

SUSSEX is a maritime county, 70 miles long, and 28 broad; bounded on the north by Surry, on the north-east and east by Kent, on the south by the English channel, and on the west by Hampshire. It is divided into 5 rapes, containing 1 city, 16 market-towns, and 313 parishes; and sends 20 members to parliament. The air is often thick and foggy, but not unwholesome, unless it be in the low marshy lands; the soil in the middle is rich and fruitful, and the north side is shaded with extensive woods. Sussex is not distinguished for any manufacture but that of gunpowder, at Battle; and of needles, at Chichester. The principal rivers are, the Arun, Adur, Owze, and Rother. The city of Chichester, Lewes, East Grinstead, and Brighthelmstone, are the chief towns. Hastings, Rye, Winchelsea, and Seaford, are called Cinque Ports. Chichester is the capital.

WARWICKSHIRE is an inland county, 47 miles long, and 30 broad; bounded at its northern extremity by a point of Derbyshire, on the north-west by Staffordshire, on the north-east by Leicestershire, on the west by Worcestershire, on the east by Northamptonshire, on the south-west by Gloucestershire, and on the south-east by Oxfordshire. It lies partly in the dioceses of Litchfield and Coventry, and partly in that of Worcester; contains 4 hundreds, and 1 liberty, 1 city, 12 market-towns, and 205 parishes; and sends 6 members to parliament. The air is very mild, pleasant, and healthy. The north part, called the Woodlands, is divided from the south, called the Feldon, by the river Avon: and the soil of both is rich and fertile. It produces corn, malt, wool, wood, cheese, coal, iron, and limestone. The principal rivers are, the Avon, Tame, and Arrow. The chief towns are, Warwick, the city of Coventry, Birmingham, Stratford-on-Avon, Southam, Coleshill, and Nuneaton. Warwick is the county-town, situated on a rocky eminence, above the river Avon, over which is a strong bridge. It was fortified with a wall, now in ruins; but it has still a fine castle of the ancient earls of Warwick, inhabited by the present possessor of that title.

It had anciently 6 monasteries and 6 churches; of the latter two only remain: it has likewise a handsome shire-house, a good free-school, and a noted hospital, called St. James's, for 12 reduced gentlemen, who have each 20l. a year, and the chaplain 50l. It is 15 miles south-west of Coventry.

WESTMORELAND is 42 miles long, and 32 broad; bounded on the north and north-west by Cumberland, on the east and south-east by Yorkshire, and on the south and south-west by Lancashire. It is generally divided into the baronies of Kendal and Westmoreland: the former is very mountainous, but the latter is a large champaign country. It is also divided into 4 wards. It lies partly in the diocese of Chester, and partly in that of Carlisle; contains 8 market-towns, and 32 parishes; and sends only 4 members to parliament. The air is clear, sharp, and salubrious, the natives generally living to old age. The soil is various, that on the mountains being very barren, while that in the vallies is fertile, producing good corn and grass, especially in the meadows near the rivers. In the hilly parts on the west borders, some mines of copper are worked, but most of the ore lies so deep that it will not answer the expence. This county yields the finest slate; and abundance of hams are cured here. The principal rivers are, the Eden, Lone, and Ken. It has also several fine lakes, the principal of which is Winnander-mere, or Windermere-water. In the forest of Martindale, to the south of Ulls-water, the breed of red deer still exists in a wild state. The principal towns are, Appleby, Kendal, Kirkby-Lonsdale, and Kirkby-Stephen. Appleby is the county-town.

WILTSHIRE is an inland county, so called from the town of Wilton, once its capital. It is 53 miles long, and 38 broad; bounded on the north-east by Berkshire, on the east by Berkshire and Hampshire, on the west by Somersetshire, on the south by Dorsetshire and Hampshire, and on the north-west and north by Gloucestershire. The air is sweet and healthy, though something sharp on the hills in winter; but it is mild during that season in the vallies. The land in the north parts is generally hilly and woody, but very fertile; here being made that kind of cheese which is so much esteemed, called North Wiltshire. In the middle it chiefly consists of downs, that afford the best pasture for sheep; and in the vallies, which divide the downs, are corn-fields, and rich meadows. Its chief commodities are sheep, wool, wood, and stone: of this last there are excellent quarries on the banks of the Nadder, where some of the stones are 20 yards in length, and 4 in thickness, without a flaw. The chief manufactures are the different branches of the clothing trade. The principal rivers are the Upper and Lower Avon, the Madder, Willy, Bourne, and Kennet. This county lies in the diocese of Salisbury; contains 28 hundreds, 1 city, 23 market-towns, and 302 parishes;

and sends 34 members to parliament. The chief towns are, the city of Salisbury, Devizes, Marlborough, Malmesbury, Wilton, and Chippenham. Salisbury is the capital. It is situated in a chalky soil, almost surrounded by the Avon and its contributary rivers, and is rendered particularly clean by a small stream flowing through every street. It has a fine cathedral, crowned by a spire, the loftiest in the kingdom. The town-hall is a handsome building, and stands in a spacious market-place. Salisbury is governed by a mayor, recorder, &c. and has a manufacture of flannels and linseys, and another of hardware and cutlery. It is 21 miles north-east of Southampton.

WORCESTERSHIRE is an inland county, 30 miles long, and 20 broad; bounded on the north by Shropshire and Staffordshire, on the east by Warwickshire, on the west by Herefordshire, and on the south-east and south by Gloucestershire. It contains 5 hundreds, 1 city, 11 market-towns, and 171 parishes; and sends 9 members to parliament. The air is very healthy, and the soil in the vales and meadows very rich, producing corn and pasture, particularly the vale of Evesham, which is styled the granary of these parts. The hills have generally an easy ascent, except the Malvern Hills, in the south-west part of the county, and feed large flocks of sheep. The other hills are the Licky near Bromsgrove, toward the north; and the Bredon-hills, toward the south-east. This county had formerly two large forests, but the iron and salt-works have in a manner destroyed them; and these works are now chiefly carried on with coal. Here is plenty of fruits of most sorts, especially pears, which are in many places found growing in the hedges. The chief commodities are coal, corn, hops, cloth, cheese, cider, perry, and salt. The principal rivers are, the Severn, Teme or Tend, and Avon. The city of Worcester, Evesham, Droytwich, Bewdley, Stourbridge, and Kidderminster, are the chief towns. Worcester is the capital, and a bishop's see. It contains 9 churches besides the cathedral and St. Michael's without the liberties of the city; and has also 3 grammar-schools, 7 hospitals, and a well-contrived quay. It is governed by a mayor, aldermen, and a number of other officers, and carries on a considerable trade in woollen stuffs and gloves, and has likewise a manufacture of elegant china-ware. Here Cromwell, in 1651, obtained a victory over the Scotch army, which had marched into England to reinstate Charles II. who after this defeat escaped with great difficulty into France. Worcester is seated on a gentle ascent, on the Severn, and 56 miles north-north-east of Bristol.

YORKSHIRE, the largest county in England, is bounded on the north by Westmoreland and the bishopric of Durham, on the east by the German Ocean, on the south by Lincolnshire, Nottinghamshire, and Derbyshire, on the south-west by Cheshire, on the west by Lancashire, and on the north-west by Westmore-

land. It extends 90 miles from north to south and 115 from east to west. It is divided into 3 ridings, called the North, East, and West; and subdivided into 26 wapentakes, which contain 1city, 60 market-towns, and 634 parishes. It lies in the diocese of York, (except Richmondshire, which belongs to the diocese of Chester,) and sends 30 members to parliament. The air and soil of this extensive county vary extremely. The east riding is less healthy than the others; but this inconvenience decreases in proportion as the county recedes from the sea. On the hilly parts of this riding, especially in what is called the York Wolds, the soil is generally barren, dry, and sandy; but great numbers of lean sheep are sold hence, and sent into other parts to be fattened. The west riding enjoys a sharp but healthy air, and the land on the western side is hilly, stony, and not very fruitful; but the intermediate vallies consist of much good arable ground, and pasture for the largest cattle. It also produces iron, coal, jet, alum, horses, and goats. Here the clothing manufactures principally flourish. The north riding, in general, exceeds the other two in the salubrity of the air. The worst parts breed lean cattle; but on the sides of the hills, in the vallies, and plains, it produces good corn, and rich pastures for large cattle. Richmondshire on the north west of this riding, was formerly a county of itself; here many lead-mines are worked to great advantage. In Yorkshire, likewise, are the districts of Cleveland, Holderness, and Craven. In this last district are two of the highest hills in England; the one named Warnside, the other Ingleborough. The principal rivers are, the Ouze, Don, Derwent, Calder, Air, Warf, Nidd, Ure, and Hull, all which terminate in the Humber, which falls into the German Ocean between Yorkshire and Lincolnshire. York is the capital, with an archbishop's see. It is the Eberacum of the Romans, and many of their coffins, urns, coins, &c. have been found here. It has always been considered as the capital of the north, and, in point of rank as the second city in the kingdom; and, although it is now surpassed in wealth and populousness by many of the more modern trading towns, it still supports a considerable degree of consequence, and is the residence of many genteel families. The cathedral of St, Peter, generally called the Minster, is reckoned the most elegant and magnificent Gothic structure in the kingdom, Lincoln perhaps excepted. Besides this cathedral, York contains but 17 churches in use; though in the reign of Henry V. there were 44 parish churches, 17 chapels, and 9 religious houses. It is divided by the Ouze into two parts, which are united by a stone bridge of five arches, the centre one 81 feet wide; and the river is navigable to this city for vessels of 70 tons burden, although it is 40 miles from the sea. York is surrounded by a wall, which is now very much decayed, through which are entrances by four gates and five posterns; the former of which stands equal to the four cardinal points. It

has a castle, built by William the Conqueror, which was formerly a place of great strength, but is now a county prison for debtors and felons. Without the north gate stood the magnificent abbey of St. Mary, some ruins of which remain, and on the site of part of it is the manor or royal palace, built by Henry VIII. where several of our kings have lodged, though it is now neglected. York is governed by a lord mayor, recorder, 12 aldermen, and other officers. The guildhall, built in 1446, is a grand structure, supported by two rows of oak pillars, each pillar single. The corporation built a mansion-house, in 1728, for the lord mayor; and among the modern buildings are, a noble assembly-house, (designed by the earl of Burlington,) a theatre-royal, and an elegant court-house, on the right of the castle: here is also a very large and commodious asylum for lunatics. York is 70 miles south by east of Durham, and 89 east of Lancaster, The chief towns in this county are, the city of York, Leeds, Wakefield, Halifax, Sheffield, Rippon, Pontefract or Pomfret, Doncaster, and Aldborough, in the west riding. Richmond, Scarborough, Boroughbridge, Northallerton, Gisborough, Malton, Whitby, Knaresborough, and Thirsk, in the north riding. Kingston-upon-Hull or Hull, Beverley, Hedon, Patrington, and Burlington or Bridlington, in the east riding.

LIST of the Cities, Boroughs, Market-Towns, and remarkable Villages, in ENGLAND and WALES; how far distant from LONDON in measured Miles, and the Days on which their Markets are held.—From Ogilvy's General Itinerary.

☞ *Those places printed in Capitals, are Cities; and those in Italics, Boroughs. The figures denote the Miles distant from London, by the nearest road.*

Abbotsbury, Dors. 127, thursday
Aberavon, Glam. 192
Aberconway, Carn. 220, friday
Aberford, York. 186, wednes.
Aberfraw, Anglesea, 263
Abergavenny, Mon. 146, tuesd.
Abergely, Denb. 229, saturday
Aberistwyth, Card. 218, monday
Abingdon, Berks, 56, mon. frid.
Acton, Middlesex, 5
St. Alban's, Hertf. 21, wed. sat.
Alcester, Warwick, 103, tuesday
Alconbury, Huntingdon, 66
Aldborough, Suffolk, 94, saturd.
Aldborough, Yorksh. 208, satur.
Alford, Lincoln, 140, tuesday
Alfreton, Derby, 142, monday
Almondbury, Yorkshire, 192
Alnwick, Northam. 308 saturd.
Alresford, Hants, 57, thursday
Alston Moor, Cumb. 291 satur.
Alton, Hants, 57, saturday
Altringham, Chesh. 180, tuesd.
Amberly, Berkshire, 50
Ambleside, Westm. 276, wed.
Amersbury, Wiltsh. 77, friday
Amersham, Bucks, 26, tuesday
Ampthill, Bedf. 45, thursday
Ampthill, Lincolnshire, 115
Andover, Hants, 63, saturday
Appleby, Westmo. 270, saturd.
Appledore, Kent, 61, saturday
Arundel, Sussex, 56, wedn. sat.
ST. ASAPH, Flint. 205, satur.

Ashburn, Derb. 139, saturday
Ashburton, Dev. 192, tuesday
Ashby de la Zouch, Lei. 115, sa.
Ashford, Kent, 55, saturday
Askrigg, Yorksh. 246, thursday
Atherstone, Warw. 104, tuesd.
Attleborough, Norf. 93, thursd.
Auburn, Wiltshire, 81, tuesday
Aust Ferry, Gloucestersh. 127
St. Austle, Cornw. 245, friday
Axbridge, Somers. 130, thursd.
Axminster, Devon, 147, satur.
Aylesbury, Bucks, 38, saturday
Aylesford, Kent, 34
Aylesham, Norf. 118, saturday
Aynnoe, Northamptonshire, 68

B

Baddow, Essex, 30
Bagshot, Surry, 27
Bakewell, Derbys. 153, monday
Bala, Merioneths. 205, saturd.
Baldock, Hertf. 37, thursday
Bampton, Oxf. 71, wednesday
Bampton, Devon. 163, saturday
Banbury, Oxf. 71, thursday
BANGOR, Carn. 251, wedn.
Barking, Essex, 7, saturday
Barkway, Herts, 35, saturday
Barnard Castle, Durh. 246, wed.
Barnby Moore, Nottingh. 148
Barnet, Herts, 11, monday
Barnsley, Yorksh. 172, wednes.
Barnesley, Gloucestershire, 87
Barnstaple, Devon. 192, friday
Barton, Lancashire, 187
Barton, Lincoln. 167, monday
Barton Clay, Bedfordshire, 38
Barton Mills, Suffolk, 70
Basingstoke, Hants, 45, wedn.
BATH, Somers. 106, wed. sat.
Battle, Sussex, 56, thursday
Bawtry, Yorksh. 153, wednesd.
Beaconfield, Bucks, 23, thursd.
Beaumaris, Angl. 251, wednes.
Beccles, Suffolk, 109, saturday
Beckington, Wilts, 82
Beckington, Devonshire, 187
Bedale, Yorkshire, 222, tuesd.
Bedsont, Middlesex, 13
Bedford, Bedf. 50, tues. sat.
Bedwin, Wilts. 70, tuesday
Bedford, Northumb, 325
Bellingham, Northumb. 300
Bellingham, North. 300, tu. sa.
Belpar, Derbysh. 134, saturday
Beminster, Dorset. 137, thurs.
Bengworth, Worcestershire, 94
Benson, Oxfordshire, 46
Bere Regis, Dorset. 112, wed.
Berealston, Devonshire, 212
Berkeley, Gloucester. 114, wed.
Berkhamstead, Hertf. 26, sat.
Berwick, Northumb. 337, satur.
Betley, Staff. 157, tuesday
Beverley, Yorksh. 183, wed. sat.
Bewdley, Worc. 129, saturday
Bicester, Oxford, 54, friday
Bickington, Devonshire, 189
Bideford, Devon. 201, tuesday
Biggleswade, Bedf. 45, tuesday
Billericay, Essex, 23, tuesday
Billinghurst, Sussex, 42
Billesdon, Leicester. 93, friday
Bilston, Suffolk, 67, wednesday
Bilston, Staffordshire, 121
Binbrook, Linc. 157, wednesd.
Bingham, Nott. 124, thursday
Birbich, Wilts, 74
Birmingham, Warw. 109, thur.
Bishop's Aukland, Dur. 257, thu.
Bishop's Castle, Salop, 159, fri.
Bishop Stortford, Hertf. 30, thu.
Bisley, Glouc. 97, thursday
Bitford, Warw. 104, friday
Blackburn, Lancash. 203, wed.
St. Blaize, Cornwall, 234
Blandford, Dorset. 103, saturd.
Blechingly, Surry, 21
Blythe, Nott. 151, thursday
Blyborough, Suffolk, 98
Bocking, Essex, 41
Boddedar, Anglesea, 261
Bodmin, Cornwall, 235, saturd.
Bolingbroke, Lincolnshire, 133
Bolsover, Derb. 145, friday
Bolton, Lancashire, 197, mond.

Bookman, Surry, 34
Boroughbridge, Yorks. 206, sat.
Boscastle, Cornw. 230, thursday
Bossiney, Cornwall, 233
Boston, Linc. 113, wednes. sat.
Bosworth, Leic. 106, wednesday
Bootle, Cumb. 271, wednesday
Bottisdale, Suff. 85, wednesday
Bourn, Lincoln. 97, saturday
Bournbridge, Cambridgesh. 49
Bow, Devon, 188, thursday
Bowes, Yorkshire, 248
Bracknal, Berks, 28
Brackley, Northam. 63, wedn.
Bradwell, Essex, 52
Bradfield, Essex, 44, thursday
Bradford, Wilts, 100, monday
Bradford, Yorksh. 196, thursd.
Brading, Hants, 75
Brandnich, Devon, 167, satur.
Braintree, Essex, 40, wednesd.
Bramber, Sussex, 51
Brampton, Cumb. 311, tuesday
Brandon, Suffolk, 78
Brecon, Breck, 171, wedn. frid.
Brent, Devon, 199, saturday
Brentford, Midd. 7, saturday
Brentwood, Essex, 18, wednes.
Brewood, Staff. 129, tuesday
Bridgend, Glam. 181, saturday
Bridgenorth, Salop, 139, satur.
Bridgewater, Som. 138, thur. sat.
Bridlington, Yorksh. 206, satur.
Bridport, Dorset, 135, saturday
Brighthelmstone, Suss. 50, thur.
BRISTOL, Som. 114, wed. fri. sa.
Brixworth, Northamptonsh. 74
Broadway, Gloucestershire, 90
Bromley, Kent, 9, thursday
Bromley Abbots, Staff. 129, tues.
Bromyard, Heref. 125, tuesday
Bromsgrove, Worc. 116, tuesd.
Brough, Westm. 261, thursday
Bruton, Somer. 109, saturday
Buckenham, Norf. 93, saturday
Buckingham, Bucks, 55, satur.
Buddlesdale, Suff. 87, thursday
Bugden, Huntingdonshire, 61
Builth, Breck. 173, mond. sat.
Bungay, Suffolk, 106, thursday
Buntingford, Hertf. 31, mond.
Burford, Oxf. 72, saturday
Burford, Shropshire, 137
Burgh, Lincolnsh. 131, thursday
Burlington, Yorks. 208, saturd.
Burnham, Essex, 49
Burnham, Norf. 117, mond. sat.
Burnley, Lancash. 211, monday
Burton, Staff. 125, thursday
Burton, Westmor. 251, tuesday
Burton Strather, Linc. 161, tues.
Bury, Lancashire, 195, thursd.
Bury St. Edmund's, Suf. 71, wed.
Buxton, Derbyshire, 160.

C

Caerphilly, Glam. 160, thursd.
Caerleon, Monm. 146, thursday
Caerwise, Flintshire, 212, tues.
Callington, Corn. 210, wednes.
Calne, Wiltshire, 88, tuesday
Cambden, Gloucest. 86, tuesday
Cambridge, Camb. 51, tues. sat.
Camelford, Cornwall, 228, frid.
Cank, Staffordsire, 122
CANTERBURY, 55, wed. sat.
Cardiff, Glam. 160, wed. satur.
Cardigan, Cardiganshire, 240.
CARLISLE, Cumb. 301, sat.
Carmarthen, Carm. 207, wed. sa.
Carnarvon, Carm. 220, saturd.
Cartmel, Lanc. 250, monday
Castle Bromwich, Warwick. 205
Castle Cary, Somer. 113, tues.
Castle Rising, Norfolk, 103
Caston, Norfolk, 113, tuesday
Caston, Lincoln. 155, monday
Castworth, Huntingdonsh. 66
Catterick, Yorkshire, 227
Cawood, Yorks. 187, wednesd.
Caxton, Camb. 49, tuesday
Cerne Abbey, Dors. 120, wed.
Chapel House, Oxfordshire, 73
Chapel in Frith, Derb. 167, thu.
Chard, Somersetsh. 139, mond.
Chairing, Kent, 49
Charlesbury, Oxford. 69, frid.

Charmouth, Dorsetshire, 146
Chatham, Kent, 30, saturday
Chatteris, Cambridgeshire, 73
Cheadle, Staff. 146 saturday
Chegford, Devonshire, 187
Chellington, Bedfordshire, 58
Chelmsford, Essex, 29, friday
Cheltenham, Glouc. 94, thursd.
Chepstow, Monm. 135 saturday
Chertsey, Surry, 20, wednesday
Chesham, Bucks, 27, wednesday
Cheshunt, Hertfordshire, 13
CHESTER, Ches. 180, wed. sa.
Chester-le-Street, Durh. 263
Chesterfield, Derb. 150, saturd.
Chesterford, Cambridgesh. 45
Chewton, Somersetshire, 121
CHICHESTER, Sus. 61, we. sa.
Chiddingford, Surry, 41, we. sat.
Chidwell, Essex, 10
Chimleigh, Devon, 189, thursd.
Chippenham, Cambridgesh. 64
Chippenham Wiltsh. 93, satur.
Chipping Norton, Oxf. 73, wed.
Chiselhurst, Kent, 11
Chorley, Lanc. 208, saturday
Christchurch, Hants, 100, mon.
Christian Malford, Wiltsh. 84
Chudleigh, Devon, 185, saturd.
Church Stretton, Salop, 158, thu.
Cirencester, Glouc. 89, mon. fri.
Clandon, Surry, 33
Clapham, Surry, 3
Clare, Suffolk, 56, friday
Clay, Norfolk, 124, saturday
Claydon, Suffolk, 74
St. Clear, Carmarthenshire, 214.
Cleobury, Salop, 137, thursday
Cliffe, Northamp. 88, tuesday
Clithero, Lanc. 217, saturday
Clown, Derbyshire, 150
Cobham, Surry, 20
Cockermouth, Cum. 305, mond.
Coggleshall, Essex, 44, saturd.
Colchester, Essex, 51, wed. sat.
Coleshill, Warw. 105, wednesd.
Coleshill, Berkshire, 101
Colford, Glouc. 124, tuesday
Colnbrooke, Bucks, 17, wednes
Colne, Lanca. 218, wednesday
Colney, Hertfordshire, 18
Coltsworth, Lincolnshire, 102
St. Columb. Corn. 249, thursd.
Collumpton, Devon, 160, satur.
Comb Martin, Devon, 202, tues.
Congleton, Chesh. 161, saturd.
Corfe Castle, Dorset, 116, thur
Corby, Lincolnsh. 102, thursd.
Cornhill, Northumberland, 333
Corsham, Wiltshire, 97
Covard, Gloucest. 124, tuesday
COVENTRY, Warw. 91, fri.
Cowbridge, Glam. 173, tuesday
Cowes, Hants, 86
Cranbourn, Dorset. 93, wednes.
Cranbrook, Kent, 49, saturday
Crayford, Kent, 13, tuesday
St. Mary Cray, Kent, 14, wed.
Crediton, Devon, 180, saturday
Crewkerne, Somers. 132, satur.
Crickhowel, Breckn. 157, thur.
Crickieth, Carnarv. 234, wedn.
Cricklade, Wiltsh. 84, saturday
Cromer, Norfolk, 129, saturday
Croscomb, Somers. 120, tuesd.
Crowland, Lincoln. 93, saturd.
Crowle, Lincoln. 167, saturday
Croydon, Surry, 10, saturday
Cuckfield, Sussex, 39, tuesday
Culliford, Devonshire, 153
Culliton, Devonshire, 159

D

Dalton, Lancashire, 265, satur.
Danbury, Essex, 33
Darleston, Staffordshire, 142
Darlington, Durham, 241, mon.
Dartford, Kent, 15, saturday
Dartmouth, Devon, 203, friday
Datchet, Middlesex, 19
Daventry, Northamp. 72, wed.
St. DAVID's, Pemb. 273, wed.
Deal, Kent, 74, thursday
Dean, Northamptonshire, 82
Debenham, Suffolk, 83, friday
Dengenham, Essex, 15
Deddington, Oxf. 69, saturday

Dedham, Essex, 58
Deeping, Linc. 90, thursday
Denbigh, Denbighsh. 200, wed.
Deptford, Kent, 4
Derby, Derbys. 126, we. fri. sat.
Dereham, Norfolk, 101, friday
Devizes, Wiltsh. 89, thursday
Dinasmouthy, Merion. 195, fri.
Disley, Cheshire, 169
Diss, Norfolk, 86, friday
Dodbrook, Devon, 208, wedn.
Dolgelle, Merion. 212, tuesday
Doncaster, Yorksh. 162, satur.
Donnington, Linc. 106, saturd.
Dorchester, Dorsetsh. 120, sat.
Dorchester, Oxfordshire, 49
Dorking, Surry, 20, thursday
Dover, Kent, 72, wed. saturd.
Dover Court, Essex, 70
Downton, Wiltshire, 88, friday
Downham, Norf. 86, saturday
Drayton, Salop, 151, wednesd.
Driffield, Yorkshire, 196
Droitwich, Worces. 116, friday
Dronfield, Derbys. 156, thursd.
Dudley, Worcest. 126, saturday
Dulverton, Somers. 165, satur.
Dunchurch, Warwickshire, 81
Dunmow, Essex, 38, saturday
Dunstable, Bedf. 33, wednesd.
Dunster, Somers. 161, friday
Dunwich, Suffolk, 100, saturd.
DURHAM, Durh. 259, satur.
Dursley, Glouc. 107, thursday

E

Easingwold, Yorksh. 208, frid.
Eastbourn, Sussex, 61
East Grinstead, Sussex, 29, thu.
Eastlooe, Cornw. 231, saturday
Ealand, Yorkshire, 194
Eccleshall, Stafford, 148, friday
Ecclestone, Lanc. 206, saturd.
Eccles, Lancashire, 186
Edgware, Middlesex, 8, thursd.
Edmonton, Middlesex, 7
Effingham, Surry, 12
Egham, Surry, 17
Egremont, Cumb. 289, saturd.
Eleham, Kent, 66, monday
Elston, Northumberland, 301
Ellesmere, Salop, 178, tuesday
Elmdom, Warwickshire, 103
Elstree, Herts, 11
Eltham, Kent, 8, monday
ELY, Cambridge. 67, saturday
Empworth, Linc. 136, saturday
Enfield, Middlesex, 10, saturd.
Enston, Oxfordshire, 69
Epping, Essex, 17, friday
Epsom, Surry, 15
Esher, Surry, 16
Eton, Bucks, 22
Everley, Wiltshire, 85
Evershot, Dorsetsh. 130, friday
Evesham, Worcest. 100, mond.
Ewell, Surry, 13 thursday
EXETER, Devon. 172, we. fri.
Eye, Suffolk, 89, saturday

F

Fairford Glouc. 80, thursday
Fakenham, Norf. 108, thursday
Falmouth, Cornw. 269, thursd.
Fareham, Hants, 73, wednesd.
Farnborough, Kent, 14
Farningham, Kent, 18
Farnham, Surry, 38, thursday
Felsted, Essex, 39
Fenny, Stratf. Bucks, 45, mon.
Ferrybridge, Yorkshire, 174
Ferryhill, Durham, 250
Fetcham, Surry, 24
Feversham, Kent, 47, wed. sat.
Findon, Sussex, 55
Fisguard, Pembrook. 257, frid.
Flamborough, Yorkshire, 212
Flint, Flintshire, 193
Folkestone, Kent, 72, thursday
Folkingham, Linc. 106, thursd.
Fordingbridge, Hants, 88, sat.
Foulsham, Norfolk, 111, tuesd.
Fowey, Cornwall, 239, saturday
Framlingham, Suffolk, 87, sat.
Frant, Sussex, 87
Frimley, Surry, 30
Frompton, Dorset, 128, tuesd.

Frodsham, Cheshire, 192, wed.
Frodlingham, Yorksh. 194, thu.
Frome Somers. 130, wed. sat.
Fulham, Middlesex, 4

G

Gainsborough, Linc. 149, tues.
Garstang, Lancash. 229, thurs.
Gatton, Surry, 19
St. Germains, Cornw. 228, fri.
Gisborn, Yorksh. 220, Monday
Gisborough, Yorksh. 247, mon.
Glandford Bridge, Linc. 156, th.
Glastonbury, Somers. 124, tues.
Glen, Leicestershire, 93
GLOUCESTER, Gl. 104, w. sa.
Godalming, Surry, 34, saturday
Godmanchester, Huntingdon, 59
Godstone, Surry, 19
Golzenna, Cornwall, 282
Gosberton, Licolnshire, 102
Gosport, Hants, 73, saturday
Goudhurst, Kent, 43, wednesd.
Grampound, Cornw. 244, satur.
Grantham, Linc. 110, saturday
Grassington, Yorkshire, 188
Gravesend, Kent, 22, wed. sat.
Grays, Essex, 24, thursday
Greenwich, Kent, 5, wed. sat.
Grimsby, Linc. 168, wednesday
Grimsthorpe, Lincolnshire, 108
Grulam, Cheshire, 173
Guildford, Surry, 29, saturday

H

Hackney, Middlesex, 2
Hadley, Suffolk, 64, monday
Halesworth, Suffolk, 101, tues.
Halifax, Yorksh. 197, saturday
Hallaton, Leices. 91, thursday
Halton, Cheshire, 195, saturday
Halstead, Essex, 46, friday
Haltwhistle, Northum. 283, tue.
Hammersmith, Middlesex, 4
Hampstead, Middlesex, 4
Hampton, Glouc. 99, thursday
Hampton, Middlesex, 11
Hanwell, Middlesex, 8
Harborough, Leicest. 83, tues.
Harewood, Yorkshire, 201
Harleigh, Merion. 231, saturd.
Harleston, Norf. 99, wednesd.
Harling, Norfolk, 89, tuesday
Harlow, Essex, 23, saturday
Harold, Bedfordshire, 59
Harrow on the Hill, Midd. 10
Hartland, Devon, 214, saturd.
Hartlepool, Durham, 258, sat.
Harwich, Essex, 71, tuesday
Haslemere, Surry, 42, tuesday
Haslingden, Lanc. 204, wed.
Hastings, Sussex, 64, wed. sat.
Hatfield Regis, Essex, 30, sat.
Hatfield, Herts, 20, thursday
Hatfield, Yorkshire, 163
Hatherleigh, Devon, 201, frid.
Havant, Hants, 66, saturday
Haverford West, Pem. 253, tu.sa.
Haverhill, Suffolk, 59, wednes.
Hawarden, Flintshire, 196
Hawkeshead, Lan. 267, mond.
Hay, Breckn. 156, saturday
Haylsham, 58, saturday
Haywood, Staffordshire, 131
Hedingham Castle, Essex, 49
Helmsley, Yorksh. 218, saturd.
Helmston, Sussex, 50, thursday
Helmston, Cornw. 276, monday
Hempstead, Herts, 23, thursd.
Henley, Oxf. 35, wed. frid. sat.
Henley, Warw. 101, tuesday
HEREFORD, Her. 135, w. f. s.
Hering, Norfolk, 87
Hertford, Herts, 21, saturday
Hexam, Northum. 288, tuesday
Hedon, Yorkshire, 182, thursd.
Heytesbury, Wiltshire, 93
Hickling, Norfolk, 138
Highgate, Middlesex, 4
Higham Ferrers, Northam. 65, s.
Highworth, Wiltshire, 77, wed.
St. Hillary, Cornwall, 284
Hillington, Middlesex, 14
Hilperton, Wiltshire, 118
Hinley, Staffordshire, 123
Himerton, Warwickshire, 82
Hindon, Wiltshire, 97, thursday
Hingham, Norfolk, 99, saturd.

Hinckley, Leic. 99. monday
Hitchin, Hertf. 34, tuesday
Hockerhill, Essex, 30.
Hockliffe, Bedfordshire, 38
Hoddeston, Herts, 17, thursday
Hodnot, Salop, 135
Holbeach, Linc. 109, thursday
Holme, Cumb. 310, saturday
Holmes Chapel, Cheshire, 175
Holt, Norfolk, 119, saturday
Holt, Wiltshire, 100
Holyhead, Anglesea, 262
Holywell, Flintshire, 208, friday
Honiton, Devon, 151, saturday
Hornby, Lanc. 245, monday
Horncastle, Linc. 136, saturday
Hornchurch, Essex, 14
Horndon, Essex, 28, saturday
Hornsea, Yorksh. 190, monday
Horsham, Sussex, 36, saturday
Houlsworthy, Devon, 215, satur.
Hownslow, Middles. 9, thursday
Hovingham, Yorkshire, 215
Howden, Yorksh. 179, saturday
Hull, Yorkshire, 170, tuesd. sat.
Hungerford, Berks, 64, wednes.
Hunmanby, Yorksh. 206, tuesday
Huntingdon, Hunt. 59, saturd.
Huntley, Gloucestershire, 111
Huntspill, Somersetshire, 143
Huddersfield, Yorksh. 189, tues.
Hythe, Kent, 67, saturday

I

Ilchester, Somers. 122, wednes.
Ilford, Essex, 7
Ilfracombe, Devon, 202, saturd.
Ilminster, Somers. 135, saturd.
Ilsley, Berks, 54, wednesday
Ingatestone, Essex, 23
Ingleton, Yorkshire, 246
Ipswich, Suff. 69, wed. frid. satur.
Ireby, Cumb. 303, thursday
St. Just, Cornwall, 284
St. Ives, Cornwall, 276, wed. sat.
St. Ives, Hunting. 63, monday
Islington, Middlesex, 1
Islip, Oxford, 56, saturday
Ivingboe. Bucks, 33, friday
Ivetsey Bank, Staffordshire, 132
Ivy Bridge, Devonshire, 205
Ixworth, Suffolk, 77, friday

K

Kegworth, Leicestershire, 115
Keighley, Yorksh. 206, wednes.
Kelvedon, Essex, 41
Kendal, Westmor. 262, saturd.
Kensington, Middlesex, 2
Keswick, Cumb. 291, saturday.
Kettering, Northamp. 74, friday
Kettlewell, Yorkshire, 240
Keynsham, Somers. 114, thurs.
Kew, Surry, 7
Kidderminster, Worc. 126, thurs.
Kidwelly, Carmar. 226, tuesday
Kilburn, Middlesex, 3
Kilgarren, Pemb. 231, wednes.
Kilham, Yorksh. 200, saturday
Kimbolton, Hunt. 63, friday
Kineton, Warwick, 83, tuesday
Kingsbridge, Devon, 208, satur.
Kingsclear, Hants, 54, tuesday
Kingston, Surry, 10, saturday
Kingston Inn, Berks, 62
Kinver, Staffordshire, 128
Kirkby Lonsdale, West. 250, th.
Kirkby Moorside, Yorks. 223, w.
Kirkby Steven, West. 266, mon.
Kirkham, Lanc. 225, thursday
Kirk Oswald, Cumb. 296, thurs.
Kirton Lindsey, Linc. 147, satu.
Knaresborough, York. 202, wed.
Knighton, Radnorsh. 158, tues.
Knutsford, Chesh. 173, saturday
Krekirth, Cornw. 234, wednesd.
Kyneton, Heref. 150, wednesd.

L

Lamberhurst, Sussex, 40
Lamberhurst, Kent, 28
Lambourn, Berks, 65, friday
Lambeder Vaur, Radnorsh. 202
Lancaster, Lanc. 240, saturday
LANDAFF, Glam. 163, mond.
Langport, Somers. 128, saturd.
Langley King's, Herts, 19
Larlington, Norfolk, 87
Lavenham, Stafford. 61, tuesday

Lavington, Wiltsh. 90, wednes.
Launceston, Cornw. 214, satur.
Lea, Hereford. 111
Learmouth, Northumber. 229
Leatherhead, Surry, 18
Lechlade, Gloucest. 76, tuesd.
Ledbury, Hereford. 120, tuesd.
Lee, Essex, 39
Leeds, Yorksh. 192, tues. satur.
Leek, Stafford. 154, wednesday
Leicester, Leicester. 98, saturd.
Leigh, Lancash. 199
LeightonBuzzard, Bedf. 41, tues.
Leming, Yorksh. 209
Lenham, Kent, 44, tuesday
Leominster, Hereford. 137, friday
Leskeard, Cornw. 225, saturday
Lestwithiel, Cornw. 236, friday
Lewes, Sussex, 49, saturday
Leyburn, Yorksh. 232
Lewisham, Kent, 5
Lidney, Glouc. 122, wednesday
Lime, Dorset. 143, saturday
LINCOLN, Linc. 131, friday
Linton, Camb. 48, thursday
Lippock, Hants, 46
LITCHFIELD, Staf. 118, tu. fr.
Liverpool, Lanca. 202, wed. sat.
Llanarth, Cardig. 223, tuesday
Llanbeder, Cardig. 211, tuesd.
Llancharn, Carmar. 230, friday
Llandilovaur, Carmar. 192, tues.
Llanerchymead, Ang. 268, wed.
Llaneley, Carmar. 217, tuesday
Llangadoc, Carmar. 185, thurs.
Llangollen, Denbigh. 192, satur.
Llanidlos, Montg. 183, saturday
Llanrwst, Denbigh. 226, tuesd.
Llanymdovry, Carm. 180, we. sat.
Llanwst, Denbighsh. 229
Llansawel, Carmarthensh. 197
Llantrisset, Glamor. 170, friday
Llanfyllin, Montg. 197, tuesday
Llangharn, Carmar. 245, friday
Loddon, Norfolk, 112, friday
Longnor, Staffordsh. 161
Longtown, Cumb. 307, thursday
Lough, Linc. 155, wednes. satur.
Loughborough, Leic. 109, thurs.
Lowestoff, Suff. 117, wednesd.
Ludgershal, Wiltsh. 71
Ludlow, Salop, 142, monday
Luton, Bedfordsh. 31, monday
Lutterworth, Leic. 88, thursday
Lycham, Norfolk, 92
Lydd, Kent, 72, thursday
Lymington, Hants, 94, saturday
Lynn, Norf. 96, tuesd. saturd.
Lyngton, Cumb. 246, thursday
Lyston, Devon. 210, saturday

M

Macclesfield, Chesh. 167, mond.
Machynllath, Mont. 207, mond.
Maidenbradley, Wiltsh. 105
Maidenhead, Berksh. 26, wedn.
Maidstone, Kent, 34, thursday
Maldon, Essex, 37, saturday
Malling, Kent, 20, saturday
Malmsbury, Wiltsh. 96, saturday
Malpas, Chesh. 165, monday
Malton, Yorksh. 213, tues. satur.
Malwood, Hants, 87
Manchester, Lan. 182, tu. th. sat.
Manningtree, Essex, 60, tuesd.
Mansfield, Nott. 138, thursday
March, Cambridgesh. 81, friday
Maresfield, Sussex, 41
Margate, Kent, 71
Market Raisin, Linc. 144, thurs.
Marlborough, Wiltsh. 74, satur.
Marlow, Bucks, 31, saturday
Marsham, Wiltsh. 84
Marshfield, Glouc. 102, tuesday
Martock, Somersetsh. 130
Masham, Yorksh. 218, tuesday
Matlock, Derbysh. 144
St. Mawes, Cornw. 262
Melcomb Regis, Dors. 127, tu. fr.
Melford, Suffolk, 75, tuesday
Melksham, Wiltsh. 96, monday
Melton Mowbray, Leic. 105, tu.
Mendlesham, Suffolk, 81, tuesd.
Meon, Stoke, Hants, 65
Merazion, Corn. 287, thursday
Mere, Wiltsh. 100, tuesday
Meriden, Warwicksh. 98

Merrington, Durham, 249
Merroe, Surry, 31
Methwold, Norfolk, 84, tuesday
St. Michael, Cornwall, 250
Michaeldean, Glouc. 114, mon.
Middleham, Yorksh. 255, mon.
Middleton, Lancashire, 188
Middlewich, Chesh. 167, tuesd.
Midhurst, Sussex, 50, thursday
Milbourn Port, Somerset. 114
Mildenhall, Suffolk, 70, friday
Milton, Kent, 40, saturday
Milton Abbey, Dorset, 113, tue.
Mims, Herts, 15
Minehead, Somers. 163, wedn.
Missendon, Bucks, 31
Mistley Thorn, Essex, 61
Mitcham, Surry, 9
Modbury, Devon, 208, thursd.
Mold, Flintshire, 188, saturday
Monmouth, Monm. 129, saturd.
Montgomery, Montg. 168, tues.
Moreton, Devon, 185, saturd.
Moreton, Glouc. 83, tuesday
Morpeth, Northumb. 289, wed.
Mountsorrel, Leic. 105, mond.

N

Namptwich, Chesh. 164, sat.
Narbeth, Pemb. 242, wednesd.
Neath, Flam. 198, saturday
Needham, Suffolk, 74, wednes.
St. Neot's, Hunt. 56, thursday
Neston, Cheshire, 193
Netherstowy, Somer. 145, tues.
Nettlebed, Oxford, 40
Newark, Nott. 120 wednesday
Newborough, Angl. 250, tuesd.
Newbury, Berksh. 56, thursday
Newcastle, Northum. 270, tu. sa.
Newcastle, Staff. 149, monday
Newcastle, Carmar. 230, friday
Newenden, Kent, 53
Newent, Glouc. 112, friday
Newhaven, Sussex, 57
Newin, Cornwall, 250, saturday
Newington, Middlesex, 3
Newmarket, Camb. 61, thursd.
Newmarket, Flintshire, 296, sa.
Newnham, Glouc. 120, friday
Newport, Hants, 91, wed. sat.
Newport, Cornwall, 214
Newport, Monm. 118, saturday
Newport, Pemb. 250, saturday
Newport, Salop, 139, saturday
Newport Pagnel, Bucks, 50, sat.
Newton, Lanca. 193, saturday
Newton, Hants, 93
Newton, Salop, 146
Newton Bushel, Dev. 188, wed.
Newton, Montg. 177, saturday
Neyland, Suffolk, 57, friday
Northallerton, Yorksh. 222, we.
Northampton, Northam. 66, sat.
North Curry, Som. 138, tu. sat.
Northfleet, Kent, 21
Northleach, Gloucestersh. 81
Northop, Flintshire, 190, tues.
Northwich, Cheshire, 174, frid.
NORWICH, Norf. 108, w. fr. sa.
Nottingham, Nott. 124, w. fr. sa.
Nuneaton, Warw. 98, saturday
Nutley, Sussex, 37

O

Oakingham, Berks, 31, tuesday
Odiham, Hants, 42, saturday
Offham, Kent, 28
Okeham, Rutlandsh. 95, satur.
Okehampton, Devon, 195, sat.
Olney, Bucks, 57, monday
Ongar, Essex, 21, saturday
Orford, Suffolk, 88, monday
Ormskirk, Lanc. 209, thursday
Orton, Westm. 276, wednesday
Osmondstone, Norfolk, 93
Oswestry, Salop, 179, wednesd.
St. Osyth, Essex, 62
Otley, Yorkshire, 203, friday
Ottery, Devon, 161, tuesday
Oundle, Northamp. 78, saturd.
Overton, Hants, 55
OXFORD, Oxf. 54, wed. sat.

P

Paddington, Middlesex, 1
Padstow, Cornw. 243, saturday
Painswick, Glouc. 101, tuesday
Parkgate, Cheshire, 193

Pattrington, Yorksh. 188, sat.
Pembridge, Heref. 144, tuesd.
Pembroke, Pemb. 263, saturd.
Penkridge, Staff. 129, tuesday
Penmonruay, Merion. 233
Penrice, Glamor. 220, thursday
Penrith, Cumber. 280, tuesday
Penryn, Corn. 265, we. fri. sa.
Pensford, Somers. 117, tuesday
Penzance, Cornw. 280, thursd.
Persebridge, Durham, 237
Pershore, Worc. 106, tuesday
PETERBOROUGH, 81, th. sa.
Petersfield, Hants, 54, saturday
Petherton, Somer. 130, tuesday
Petworth, Sussex, 48, saturday
Phillips Norton, Somer. 104, th.
Pickering, Yorks. 223, monday
Pillerton, Warwickshire, 86
Plymouth, Devon, 216, mo. tu.
Plympton, Devon, 218, saturd.
Pocklington, Yorksh. 194, sat.
Polesworth, Warwickshire, 103
Pontefract, Yorksh. 174, satur.
Pontypool, Monmouth, 149, sa.
Poole, Dorsetsh. 105, monday
Porlock, Somer. 170, thursday
Portsmouth, Hants, 72, thursd.
Potton, Bed. 48, saturday
Poulton, Lanc. 233, monday
Prescot, Lancash. 197, tuesday
Presteign, Radn. 151, saturday
Preston, Lanc. 217, we. fri. sa.
Prittlewell, Essex, 41
Puckeridge, Hertfordshire, 97
Pwllhely, Carn. 244, wednesd.
Putney, Surry, 6

Q

Quat, Salop, 135
Queenborough, Kent, 45, mo. th.
Queenhope, Flintshire, 192

R

Radnor, Radn. 159, thursday
Ragland, Monmouthshire, 154
Ramsay, Hunt. 69, saturday
Ramsgate, Kent, 72
Ravenglass, Cumb. 297, satur.
Rayleigh, Essex, 35, saturday
Reading, Berksh. 37, saturday
Redburn, Hertfordshire, 26
Redruth, Cornw. 263, tue. frid.
Retford, Nottingh. 141, saturd.
Reepham, Norfolk, 111, satur.
Rhayadargowy, Radn. 178, we.
Richmond, Yorksh. 230, satur.
Richmond, Surry, 8
Rickmansworth, Hertf. 18, sat.
Ringwood, Hants, 91, wednes.
Ripley, Yorkshire, 206, friday
Ripley, Surry, 24
Rippon, Yorksh. 215, thursday
Risborough, Bucks, 37, saturd.
Riverhead, Kent, 22
Rochdale, Lancash. 198, mond.
ROCHESTER, Kent. 29, fri.
Rochford, Essex, 40, thursday
Rockingham, Northam. 83, th.
Romney, Kent, 71, thursday
Ross, Hereford, 120, thursday
Rothbury, Northumberl. 202
Rotherfield, Sussex, 42
Rotherham, Yorksh. 159, mon.
Rothwell, Northam. 79, mond.
Royston, Heref. 37, wednesday
Ruabon, Denbighs. 172, mond.
Rudgeley, Stafford. 126, tuesd.
Rugby, Warwick. 83, saturday
Rumford, Essex, 11, wednesd.
Rumsey, Hants, 73, satursday
Rushden, Northamptonsh. 64
Ruthen, Denbighs. 206, mond.
Rye, Sussex, 63, wed. sat.
Ryegate, Surry, 21, tuesday

S

Saffron Waldon, Essex, 42, sat.
SALISBURY, Wilts. 81, tu. sa.
Saltash, Cornw. 220, saturday
Saltfleet, Lincoln. 153, saturd.
Salt Hill, Bucks, 21
Sandbach, Chesh. 162, thursd.
Sandwich, Kent, 68, wed. sat.
Sarum (Old) Wiltshire, 82
Sawbridgworth, Herts, 27
Saxmondham, Suff. 89, thursd.
Scarborough, Yorks. 214, th. sa.
Schole, Norfolk, 94

Seaford, Sussex, 60
Sedberg, Yorkshire, 265
Seeching, Norfolk, 93, tuesday
Selby, Yorkshire, 180, monday
Selsoe, Bedfordshire, 41
Settle, Yorkshire, 235, tuesday
Sevenoaks, Kent, 23, saturday
Shaftsbury, Dorset. 100, satur.
Shep, Westmorl. 237, saturday
Sheepwash, Devon, 208
Sheffield, Yorksh. 162, tuesday
Shefford, Bedfordsh. 41, friday
Shefford, Berkshire, 94
Shefnal, Salop, 137, friday
Shepton Mallet, Somer. 116, fri.
Sherborne, Dors. 116, thu, sat.
Sherburne, Yorks. 179, satur.
Shipston, Worc. 83, friday
Shoreham, Sussex, 56, saturd.
Shrewsbury, Salop, 155, we. fr. s.
Shrivenham, Berkshire, 77
Shooter's Hill, Kent, 8
Sidmouth, Devonshire, 158
Sittingbourn, Kent, 40
Skipton, Yorksh. 216, saturday
Sleaford, Linc. 115, monday
Slough, Bucks, 22
Smarden, Kent, 56, friday
Snaith, Yorkshire, 175, friday
Snettisham, Norfolk, 111, frid.
Sodbury, Glouc. 110, thursday
Soham, Camb. 70, saturday
Solihul, Warwickshire, 108
Somerton, Somers. 123, tuesday
Southam, Warw. 82, monday
Southampton, Hants, 74, tu. th. s.
South Church, Essex, 43
Southgate, Middlesex, 7
Southill, Bedfordshire, 44
Southminster, Essex, 48
South Molton, Devon, 180, sat.
Southwark, Surry, daily
Southwell, Nott. 129, saturday
Southwold, Suff. 105, thursday
Spalding, Lincoln. 97, tuesday
Spilsby, Lincoln. 133, monday
Stafford, Stafford. 135, saturd.
Staines, Middlesex, 16, friday
Stainton, Linc. 129, monday
Stalbridge, Dors. 110, tuesday
Stamford, Linc. 86, mon. frid.
Standon, Hertfordsh. 27, friday
Stanhope, Durham, 263, tuesd.
Stanley, Glouc. 105, saturday
Stanmore, Middlesex, 10
Stapleford, Wiltshire, 93
Steeple Ashton, Wiltshire, 108
Stevenage, Hertf. 31, friday
Steyning, Sussex, 50, wednesd.
Stilton, Huntingdonshire, 75
Stockbridge, Hants, 66, thursd.
Stockport, Chesh. 176, friday
Stockton, Durh. 243, wednesd.
Stokegomer, Somersetsh. 152
Stokesley, Yorksh. 237, saturd.
Stoken Church, Oxfordsh. 39
Stone, Staffordsh. 140, tuesday
Stone Crouch, Kent, 43
Stoughton, Huntingdonsh. 58
Stourbridge, Worc. 126, friday
Stow, Glouces. 83, thursday
Stowey, Somerset. 147, tuesday
Stow Market, Suff. 69, thursd.
Standish, Lancash. 190
Stratford, on Avon, Warw. 93
Stratford Stony, Bucks, 52
Stratford, Essex, 3
Stratford, Fenny, Bucks, 45, mo.
Stratford, Sussex, 57
Stratton, Cornw. 222, tuesday
Stratton, Norfolk, 104
Stretton, Lincolnshire, 142
Stroud, Glouc. 100, friday
Stroud, Kent, 29
Sturminster, Dors. 108, friday
Sudbury, Suffolk, 54, saturday
Sundbury, Middlesex, 7
Sunderland, Durh. 269, friday
Sutton, Hants, 59
Sutton, Surry, 11
Sutton Colfield, War. 110, mon.
Swaffham, Norf. 93, saturday
Swansea, Glam. 206, wed. sat.
Swindon, Wiltsh. 83, monday

T

Tadcaster, Yorksh. 187, thurs.

Talke, Staffordshire, 154
Tamworth, Staff. 115, saturday
Tarring, Sussex, 57, saturday
Tattershall, Linc. 125, friday
Tavistock, Devon, 207, saturd.
Taunton, Somers. 141, wed. sat.
Teddington, Middlesex, 12
Tenbury, Worc. 133, tuesday
Tenby, Pemb. 253, wed. sat.
Tenterden, Kent, 56, friday
Tetbury, Gloucesters. 99, wed.
Tetsworth, Oxfordshire, 42
Tewkesbury, Glouc. 103, we. sat.
Thame, Oxfordsh. 44, thursday
Thatcham, Bucks, 53
Thaxted, Essex, 44, friday
Theal, Berkshire, 44
Thetford, Norfolk, 80, saturday
Thirsk, Yorksh. 220, monday
Thorn, Yorks. 165, wednesday
Thornbury, Glouc. 122, saturd.
Thorney Camb. 84, tuesday
Thrapston, Northamp. 73, tues.
Tickhill, Yorkshire, 154, friday
Tideswell, Derby. 160, wednes.
Tilbury Fort, Essex, 28
Tillingham, Essex, 51
Tinhead, Wiltshire, 107
Tinmouth, Northumb. 281
Tiverton, Devon, 161, tuesday
Topsham, Devon, 170, saturday
Torperley, Cheshire, 171
Torrington, Devon, 194, satur.
Totness, Devon, 196, saturday
Totteridge, Herts, 10
Towcester, Northamp. 60, tues.
Trecastle, Brecknockshire, 172
Tregarron, Cardig. 204, tuesd.
Tregony, Cornw. 253, saturday
Trentham, Staffordshire, 145
Tring, Herefordsh. 31, friday
Trowbridge, Wiltsh. 99, saturd.
Truro, Cornw. 257, wed. sat.
Tuddington, Bedf. 39, saturd.
Tunbridge, Kent, 30, friday
Tunbridge Wells, Kent, 35
Tutbury, Stafford. 130, tuesday
Tuxford, Nott. 137, monday
Twickenham, Middlesex, 11
Twyford, Berkshire, 34
Twyford, Hampshire, 67

U

Uckfield, Sussex, 41
Ulverstone, Lanc. 261, monday
Upminster, Essex, 15
Uppingham, Rutland. 89, wed.
Upton, Worcestersh. 111, thur.
Uske, Monm. 142, monday
Uttoxeter, Staff. 135, wednesd.
Uxbridge, Middlesex, 15, thur.

W

Wainfleet, Lincoln. 128, satur.
Wakefield, Yorks. 181, thu. fri.
Wakeing, Essex, 41
Wallingford, Berks. 46, tue. fri.
Walmsford, Northamptonsh. 82
Walsal, Stafford. 115, tuesday
Walsham, Norfolk, 125, thurs.
Walsingham, Norf. 113, friday
Waltham, Hampshire, 65, frid.
Waltham, Leic. 112, thursday
Waltham Abbey, Essex, 12, tu.
Waltham Cross, Hertf. 11, tue.
Walthamstow Essex, 5
Walton, Surry, 18
Wandsworth, Surry, 5
Wansford, Northampton. 84
Wanstead, Essex, 6
Wantage, Berksh. 60, saturday
Wardbridge, Cornw. 242, sat.
Ware, Herts, 21, tuesday
Wareham, Dorset, 112, saturd.
Warminster, Wiltsh. 96, satur.
Warkesworth, Northu. 302, thu.
Warrington, Lanc. 182, wed.
Warsdale, Cumberland, 286
Warwick, Warw. 90, saturday
Watchet, Somers. 154, saturd.
Watford, Hertf. 15, tuesday
Watlington, Oxf. 46, saturday
Watling Street, Salop, 143
Watton, Norf. 91, wednesday
Weighton, Yorksh. 190, wed.
Wetherby, Yorksh. 191, thurs.
Weldon, Northamp. 83, wed.

Welling, Kent, 11
Wellingborough, Northa. 67, we.
Wellington, Salop, 146, thursd.
Wellington, Somers. 150, thurs.
WELLS, Somers. 120, wed. sat.
Wells, Norfolk, 118
Welshpool, Montg. 176, monday
Welwyn, Hertfordsh. 25
Wem, Salop, 172, thursday
Wendover, Bucks, 35, thursday
Wenlock, Salop, 148, monday
Wentbridge, Yorksh. 170
Weobly, Heref. 147, tuesday
Werrington, Lincolnsh. 82
Westbury, Wiltsh. 99, friday
Westlooe, Cornw. 232, saturday
WESTMINSTER, Midd. daily
Westerham, Kent, 21, wednesd.
Weybridge, Surry, 20
Weyhill, Hants, 68
Weymouth, Dors. 128, tues. fri.
Wheatley Bridge, Oxfordsh. 48
Whitby, Yorksh. 243, saturday
Whitchurch, Hants, 56, friday
Whitchurch, Salop, 161, friday
Whitehaven, Cumb. 294, tuesd.
Wittingham, Northum. 306
Wickham, Hants, 71
Wickham, Suffolk, 81
Wickware, Glouc. 111, monday
Wigan, Lanca. 196, mond. frid.
Wigton, Cumb. 304, tuesday
Willey, Wiltsh. 88, wednesday
Wilton, Wiltsh. 85, wednesday
Wimbourn, Dors. 100, friday
Wincaunton, Somers. 108, wed.
Winchcombe, Glouc. 99, satur.
Winchelsea, Sussex, 64, saturd.
WINCHESTER, Hants, 62, we. sat.
Windsor, Berksh. 22, saturday
Winslow, Bucks, 49, tuesday
Winster, Derb. 147, saturday
Wirksworth, Derb. 140, tuesd.
Wisbeach, Camb. 89, saturday
Wiston, Pemb. 248, saturday
Witham, Essex, 38, tuesday
Witney, Oxfordsh. 65, thursday
Wiveliscomb, Somers. 153, tues.
Wivenhoe, Essex, 55
Wolking, Surry, 28, tuesday
Wolsingham, Durham, 257
Wooburn, Bedford. 42, friday
Wooburn, Bucks, 28, friday
Woodbridge, Suffolk, 77, wed.
Woodford, Essex, 8
Woodstock, Oxfordsh. 62, tues.
Woolpit, Suffolk, 64, thursday
Woolavington, Somerset. 140
Wooler, Northum. 317, thursd.
Wolverhampton, Staff. 126, wed.
Woolwich, Kent, 8, friday
WORCESTER, Wor. 111, w. f. s.
Wore, Salop, 155
Workington, Cumberl. 302
Worksop, Nott. 146, wednesday
Worsted, Norfolk, 121, saturd.
Wotton, Gloucester. 109, friday
Wotton, Yorksh. 189
Wotton Basset, Wiltsh. 88, frid.
Wovenden, Bucks, 46
Wrexham, Denb. 176, thu. sat.
Wrington, Somers. 125, tuesday
Wrotham, Kent, 24, tuesday
Wycombe, High, Bucks, 31, frid.
Wye, Kent, 55, thursday
Wymondham, Norf. 100, friday

Y

Yarmouth, Hants, 100, friday
Yarmouth, Norfolk, 124, satur.
Yarum, Yorksh. 240, thursday
Yaxley, Hunt. 78, tuesday
Yeovil, Somersetsh. 122, friday
YORK, Yorksh. 195, tu. th. sat.
Yoxford, Suffolk, 93

WALES, SCOTLAND, *and* IRELAND.

WALES, a principality in the west of the island of Great Britain, comprehending 12 counties; namely, Anglesey, Carnarvonshire, Denbighshire, Flintshire, Merionethshire, and

Montgomeryshire, in North Wales; Brecknockshire, Cardiganshire, Carmarthenshire, Glamorganshire, Pembrokeshire, and Radnorshire, in South Wales. This country is for the most part mountainous, but its produce is sufficient for the maintenance of the inhabitants. It is the country to which the ancient Britons fled, when this island was invaded by the victorious Saxons.—They are now called Welsh, and continue to preserve their ancient language. The western part is bounded by St. George's Channel and the Irish Sea; the southern by the Bristol Channel; the northern by the Irish Sea; and the eastern by the counties of Chester, Salop, Hereford, and Monmouth. It contains 751 parishes, and 58 market-towns. The air is clear and sharp, the cattle small, and provisions, in general, good and cheap. Wales is particularly remarkable for goats, which naturally delight in hilly countries; for fuel, they use wood, coal, and turf. It is watered by many rivers, the principal of which are noted in the different counties. Wales was long governed by independent kings, till their last prince, Llewellyn, being vanquished and slain in 1283, Edward I. reduced the whole country under the English dominion. He also invested the principality in his second son, Edward, who afterwards becoming heir to the English monarchy, the eldest son of the king of England has ever since been created Prince of Wales. In the reign of Henry VIII. the government and jurisprudence of Wales were modelled according to the English form, and the inhabitants admitted to the enjoyment of all the English rights and liberties, particularly that of sending members to parliament, a knight for every shire, and a burgess for every shire-town, except Merioneth. The counties are particularized as follows:

Isle of ANGLESEY, the most western county of N. Wales, through which the mails regularly pass between London and Dublin. It was called by the ancients Mona, and was the seat of the Druids, of whom there seem to be some monumental remains, in the erections of huge stones, singly and collectively, in circles, and one upon another, as at Stonehenge; they are without any inscription, to shew the time or occasion of their erection. Here are also found some Roman and other antiquities. Anglesey is an island, being separated from Carnarvonshire by a long and narrow strait, called Menai, or Menu, which, in some places, however, is fordable at low water. It is about 24 miles long, and 18 broad; and contains 77 parishes. It is a fertile spot, has some valuable quarries, and a very rich copper mine on Pary's Mount. Beaumaris is the county-town, and has a bay before it that affords good anchorage, and is a frequent refuge for ships in stormy weather; it is 59 miles west by north of Chester, and 251 north-west of London.

CARNARVONSHIRE, a county of N. Wales, about 50 miles in length, and 13 in breadth, is bounded on the west and

north by the sea and the isle of Anglesey, on the east and south-east by Denbighshire and Merionethshire, and on the south by Merionethshire and the sea. It contains 10 hundreds, 72 parishes, 5 market-towns, and 1 city. The air is cold; this county being the most mountainous district of North Wales. Its central part is entirely occupied by the lofty Snowden, and the several craggy summits, deep dells, moors, chasms, and lakes, which constitute its dreary region. Cattle, goats, and sheep are its rural riches. Foxes are the chief wild animals. Several copper mines have been worked in various parts, and there are some of these at present about Llanberries. Other places afford lead; and slates, with quantities of stone, excellent for hones, are dug near Snowden. Carnarvon, the county-town, is well-built and populous, with a celebrated castle, in a small dark room of which, not 12 feet long nor 8 broad, Edward II. was born; it is surrounded on all sides, except the east, by the sea and two rivers, one of which is the Menay. The harbour is tolerably good, with 9 feet at low water. Carnarvon has no manufactures, but carries on a considerable trade with Ireland, Liverpool, Bristol, and London. It is 7 miles south-west of Bangor, and 244 north-west of London.

DENBIGHSHIRE, a county of N. Wales, bounded on the west by Carnarvonshire, from which it is for the most part separated by the river Conway; on the north and north-east by the Irish sea, and Flintshire; on the east by Flintshire, Cheshire, and Shropshire; and on the south by Merionethshire and Montgomeryshire. It extends from north-west to south-east 48 miles, and from north to south, in its broadest part, it is 20 miles; but in general it is much less. It is divided into 6 hundreds, which contain 3 market-towns, and 59 parishes. The soil is various, the vale of Clwyd being remarkably pleasant and fertile, which is not the case with the east part of the county; and the west is, in a manner, barren. The principal rivers are, the Clyde, Elwy, Dee, and Conway. The products of this county are chiefly corn, cheese, cattle, lead, and coal. Among the hills are found small pillars, with inscriptions which no one hitherto has been able to read; as also stones, called Druid stones. Denbigh is the county-town, which is well built and populous, situate on the summit of a rock, sloping on every side but one, on a branch of the river Clwyd. It has a considerable manufacture of gloves and shoes, which are sent to London for exportation. It is 27 miles west of Chester, and 200 north-west of London.

FLINTSHIRE, a county of N. Wales, bounded on the north-west by the Irish Sea; on the north and north-east by a large bay at the mouth of the river Dee, which divides it from Cheshire; on the east by the river Dee and part of Cheshire; and on the south and south-west by Denbighshire. It is about 29 miles in length, and 12 in breadth. Part of Flintshire stretches east of the Dee, a tract about 9 miles in length, and from 5 to 8 across,

insulated by Cheshire, Shropshire, and Denbighshire. It is divided into 5 hundreds, which contain 1 city, 3 market-towns, and 21 parishes. The northern part produces wheat; there is also much wood. The cows, though small, yield a great quantity of milk, and are excellent beef. They have honey also, of which they make mead, a liquor much used in those parts. The principal rivers are, the Dee, Clwyd, Wheeler, Sevion, Elwy, and Allen. The vallies contain coal and free-stone, and the hills lead and calamine, with vast quantities of lime-stone, but no flint. The principal trade is mining and smelting. The detached part is mostly a level country. Flint, a small town, is the capital, without much trade, or even a market; and is seated on the river Dee, 12 miles west-north-west of Chester, and 193 north-west of London.

MERIONETHSHIRE, a county of N. Wales, bounded on the north by Carnarvonshire and Denbighshire; on the east by the latter county, and that of Montgomery; on the south by Montgomery and a small part of Cardiganshire; and on the west by the Irish Channel. It extends 36 miles from north to south, and is 34 wide in its broadest part. The soil is as bad as any in Wales, being very rocky and mountainous; however, large flocks of sheep and goats, and large herds of horned cattle, find pretty good pasture in the vallies. The face of the country is awfully and astonishingly romantic, and it is well clothed with wood. The principal rivers are the Dee and Dovy; and it has a great mountain, the Cader Idris, one of the highest in Wales. Merionethshire contains 5 hundreds, 4 market-towns, and 23 parishes. Harlech is the county-town; a mean place, but naturally strong, being seated on a rock on the sea-shore. It is chiefly remarkable for its castle, built by Edward I. which is still almost entire. Near it is a cataract of the Rhais Du, which rushes down a mountain for above 100 yards, and then forms a cascade, part of an elliptical curve, to a pool 40 feet below. It is 24 miles south of Carnarvon, and 231 west-north-west of London.

MONTGOMERYSHIRE, a county of N. Wales, bounded on the north by Merionethshire and Denbighshire, on the north-east and east by Shropshire, on the south by Radnorshire, on the south-west by Cardiganshire, and on the west by part of Merionethshire. It extends 36 miles from north to south, and about 34 from east to west, and is divided into 9 hundreds, which contain 5 market-towns, and 53 parishes. The air is pleasant and salubrious, and the country in general mountainous, but fertile, (the south, south-east, and north-east parts, are extremely so, being much more level,) and agreeably interspersed with vallies, hills, meadows, and corn-fields. The hilly tracts are almost entirely sheep-walks; and the flocks, like those of Spain, are driven from distant parts to feed on them

during the summer. This county also affords mineral treasures, particularly lead; and it abounds with slate and lime; but there is no coal. Its principal rivers are, the Severn, Vyrnew, and Thannet, which are remarkable for their great variety of fish, and for salmon in particular. Montgomery, the county-town, is small and neat, with a rich soil, but little trade. The reliques of its castle, which stand on a projecting ridge, of great height and steepness, and towards the end are quite precipitous, impend in a picturesque manner over the town, but are now very small. It is pleasantly situated on a rocky hill, near the Severn, 26 miles south-west by west of Hereford, and 168 north-west of London.

BRECKNOCKSHIRE, a county of S. Wales, 38 miles in length, and 28 in breadth. It has 4 market-towns, 6 hundreds, and 67 parishes. It is bounded on the west by Carmarthenshire and Cardiganshire; on the north and north-east by Radnorshire; and on the east by Radnorshire, Herefordshire, and Monmouthshire; and on the south by Glamorganshire and Monmouthshire. It is very mountainous, but has large fertile plains and vallies. Its principal rivers are, the Wye, the Usk, and the Yrvon. Brecknock, or Brecon, is the county-town; which is large and populous, and seated at the confluence of the rivers Honddey and Usk; the houses are well built; it has a good trade in clothing, and its markets are well supplied with cattle, corn, and other provisions. It is 34 miles north-west by west of Monmouth, and 171 west by north of London.

CARDIGANSHIRE, a county of S. Wales, is bounded on the west by Cardigan Bay, in the Irish Channel; on the north and north-east by Merionethshire and Montgomeryshire; on the east and south-east by Radnorshire and Brecknockshire; and on the south by Carmarthenshire. It extends 42 miles in length, and 20 in breadth, and is divided into 5 hundreds, which contain 6 market-towns, and 65 parishes. The air is milder here than in most parts of Wales. To the south and west are plains fruitful in corn: but the north and east parts are a continued ridge of bleak mountains, yet there are pastures well stocked with sheep and cattle. Here is also plenty of tame and wild fowl, and it is well supplied with fish from the sea, and from its own lakes and rivers, near which is a great number of otters. The mountains abound with lead and silver ore, mines of which have several times been worked to advantage. The principal rivers are the Tivy, Rydal, and the Istwith. Cardigan Bay lies on the coast. Cardigan, the county town, is large, populous, and pleasantly situated on the river Tivy, over which there is a handsome bridge. In its neighbourhood are iron and tin works, established about the year 1768. It is 33 miles north-east by east of St. David's, and 225 west-north-west of London.

CARMARTHENSHIRE, a county of S. Wales, 35 miles in length, and 20 at its greatest breadth, is bounded on the west by

Pembrokeshire; on the north and north-east by Cardiganshire and Brecknockshire; on the east and south-east by Brecknockshire and Glamorganshire; and on the south by the Bristol Channel. It contains 6 market-towns and 39 parishes; and is fruitful in corn, grass, wood, coal, and sea-fish, especially salmon. The air is mild, it not being extremely mountainous. Carmarthen, the county-town, is well built and populous, and was in former times the residence of the princes of S. Wales, and now usually reckoned the politest place in the principality. It is pleasantly situated in a fertile country, on the river Towy, (near its conflux with the Gwilly,) over which it had a narrow stone bridge (but lately widened) of 7 arches, with a very commodious quay, to which vessels of 200 tons burden may come up; 24 miles south-east of Cardigan, and 220 west by north of London.

GLAMORGANSHIRE, a county of S. Wales, is bounded on the north by Carmarthenshire and Brecknockshire, on the east by Monmouthshire, and on the south and west by the Bristol Channel. It extends from east to west 48 miles, and 26 from north to south. It is divided into 10 hundreds, which contain 1 city, 5 market-towns, and 125 parishes. On the north side of this county, where it is mountainous, the long continuance of the snow renders the air sharp; but the country being more level on the south side, it is there milder, more pleasant, more populous, and bears large crops of corn, with remarkably sweet grass; whence it has been called the Garden of Wales. Cattle abound in all parts, there being fruitful vallies among the mountains, that yield very good pasture. Here are also lead, coal, iron, and lime-stone. Its principal rivers are the Rumney, which separates it from Monmouthshire, the Teafe, Elwy, Neath, Ogmore, Avon, Cledaugh, and Tawy. Cardiff is the principal town, and Swansea the most commercial one; but the assizes for the county are held at Cowbridge.

PEMBROKESHIRE, the most western county of S. Wales, is 37 miles in length, 28 in its mean breadth, and surrounded on all sides by the sea, except on the north-east and east, where it is bounded by Cardiganshire and Carmarthenshire. It is divided into 7 hundreds, which contain 1 city, 7 market-towns, and 142 parishes. The principal rivers are the E. and W. Cledhue. A great part of the county is plain, and tolerably fertile, consisting of rich meadow and arable land. One part alone is mountainous, extending from the coast, near Fisguard, to the borders of Carmarthenshire. This, however, yields good pasture for sheep, horned cattle, and goats, with which the county in general abounds; as also with wild fowls of various kinds, some of which are seldom seen in any other part of Britain. There is probably more rain here than in any other part of the kingdom, brought by the westerly winds from the Atlantic Ocean. The only manufactures of the county consist of a cotton-mill, near Haverfordwest,

which employs about 150 persons; a forge at Blackpool; and some iron and tin works on the Tivy. Pembroke, the county-town, is well built and well inhabited, with two churches and a custom-house, and, next to Carmarthen and Brecon, the richest town in S. Wales. Here are merchants who employ nearly 200 sail on their own account. It is situate in one of the most pleasant parts of Wales, on two small rivers, that run into Penermouth, (the innermost creek of Milford-Haven, and which forms the west side of a promontory,) 10 miles south-east of Haverford-west, and 263 west by north of London.

RADNORSHIRE, a county of S. Wales, is 30 miles in length, and 25 in breadth; bounded on the east by Shropshire and Herefordshire; on the west, south-west, and south, by Cardiganshire and Brecknockshire; and on the north by Montgomeryshire. It is divided into 6 hundreds, which contain 4 market-towns, and 49 parishes. The east and south parts of this county are tolerably level, and productive of corn; the other parts are rude and mountainous, devoted chiefly to the rearing of horned cattle, sheep, and goats. The north-west angle is an absolute desert, and almost impassable. Radnor, a very ancient town, was formerly the capital, but the assizes are now held at Presteign. Radnor has one extraordinary privilege, that of keeping a court of pleas for all actions, without being limited to any particular sum. It is seated near the spring-head of the river Somergil, or Hendwell, (which rises in the Hendwell pool, and empties itself into the Lug, a little below Presteign,) 24 miles north-west of Hereford, and 245 west-north-west of London.

SCOTLAND, or NORTH BRITAIN, the most northern of the two kingdoms into which the island of Great Britain was formerly divided. It is bounded on all sides by the sea, except towards the south and south-east, where it is joined to England. The islands, also, on its western coast, called the Hebrides, or Western Islands, and those to the north-east, called the Orkney and Shetland Islands, appertain to Scotland. From north to south, Scotland extends about 270 miles, and from east to west, in some parts, 150 miles, but in others only 30. Exclusively of the islands, Scotland seems to be naturally divided into three large districts. The north division is formed by a chain of lakes, which cross the country from the Frith of Murray to the island of Mull. The middle division is bounded on the south by the Friths of Forth and Clyde, and the great canal by which they are united; and, on the south side of this boundary, is the south division. The northern divison is chiefly an assemblage of vast dreary mountains; not, however, without some fertile vallies on the northern and eastern shores. The middle division is traversed, in different directions, by many great ranges of mountains; and

though cultivation here is also found, especially on the eastern shore, yet of this division, as well as of the former, it may be observed, that the arable land bears but a small proportion to the mountainous and barren tracts. However, the eastern coast of the middle division, and the whole of the southern, has a great resemblance to England, and, with respect both to the general aspect of the country, and to the progress of cultivation, exhibits every kind of rural variety. The rivers of Scotland are, in general, remarkable for their rapidity, and yield abundance of salmon, trout, and other excellent fish; the principal are, the Spey, Don, Tay, Tweed, Clyde, Forth, the Northern Dee, the Esk, Annan, Nith, and Southern Dee; and the lochs, or lakes, are numerous and extensive. The climate is very various, in different places. The northern extremity, which is in the same latitude with some parts of Norway, is extremely cold; but the frosts are far from being so intense here as in parts on the continent equally as far to the north. For this advantage, Scotland is indebted to an insular situation. Its west coast is subject to frequent rains in the summer, and to sudden changes of weather. In many places on the eastern shore, and in the whole south division, the climate is not inferior to the north part of England; and, in general, the air of Scotland is very healthy. The products of the country are, grain, flax, woods of oak and fir, coal, lead, iron, free-stone, lime-stone, slate, the most beautiful marble, fine rock crystals, pearls, variegated pebbles, kelp, &c. It feeds vast herds of cattle and flocks of sheep; they are both small, but much valued for the delicacy of their flesh; and the fleece of the latter emulates the finest Spanish wool. It is in the high ground that the cattle are so diminutive; for, in many parts of the country, the horses and cows are not excelled in size and beauty by those of the English breed. Among the wild animals are, the roe, stag, fox, badger, otter, hedge-hog, rabbit, weasel, mole, and other small quadrupeds. Among the feathered race are, the capercailzie, or cock of the wood, the eagle, falcon, partridge, quail, snipe, plover, black-game, grouse, &c. The fisheries in the surrounding seas are of great national importance, and will become a real source of wealth to the nation, when increasing commerce shall enable the inhabitants to form roads, erect villages, and open canals, in the remote parts of the country. The trade and population of most of the great towns have considerably increased of late years. The western shores, however, are annually drained of their inhabitants by the emigration of individuals. Scotland was an independent kingdom till James VI. was called to the throne of England; and in the reign of Q. Anne, one of his successors, both kingdoms were united under the name of Great Britain. Sixteen peers are elected to represent the nobility, and 45 commoners to represent the counties and boroughs in the same parliament with that of England. There are five

universities in Scotland, viz. St. Andrew's, Glasgow, Edinburgh, New Aberdeen, and Old Aberdeen. Scotland is divided into 33 counties, namely, Shetland and Orkney, Bute, Caithness, Sutherland, Ross, Cromarty, Nairne, Inverness, Murray, Banff, Aberdeen, Kincardine, Angus, Perth, Fife, Kinross, Clackmannan, Stirling, Dunbarton, Argyle, Renfrew, Ayr, Wigton, Kirkcudbright, Dumfries, Roxburgh, Selkirk, Peebles, Lanerk, Linlithgow, Edinburgh, Haddington, and Berwick. The established religion is the Presbyterian, and the capital is Edinburgh. The counties are briefly described as follows :

ORCADES, or ORKNEYS, a cluster of islands on the north of Scotland, from which they are separated by a channel, 20 miles in length, and 6 in its nearest breadth. Their number has generally been reckoned 30, of which 26 are inhabited; the rest are called Holms, and are used only for pasturage. The principal one, called the Main Land, or Pomona, greatly exceeds the others in extent. Beyond this island, to the north-east are seen, among others, Rowsay and Westra, Shappinsha and Edda, Stronsa, Sanda, and N. Ronalsha. To the south appears the Isles of Hoy and S. Ronalsha, with others of inferior note. The currents and tides which flow between these islands, are extremely rapid and dangerous; and near the small isle of Swinna are two whirlpools, that have been known to snatch in boats and light vessels, which were instantly swallowed up. The strait, called Pentland Frith, which divides these islands from the county of Caithness, is likewise very dangerous to those who are not well acquainted with the tides and currents, especially in passing the Pentland Skerries a cluster of rocks that lie in the east entrance of the Frith. Springs of pure water are found in all the mountainous parts of these islands; and there are numerous lakes and rivulets abounding in fish. The heath on these mountains shelters grouse, plovers, snipes, &c. but here are neither partridges, hares, nor foxes. There are numbers of sheep and small black cattle. The products of the valleys and plains are, here, (an inferior kind of barley,) and oats, but no other sort of grain. The climate of these islands is unfavourable, although they do not suffer so much from frost and snow as might be supposed from their northerly position. In general the air is moist; and they are often visited by dreadful storms of wind, rain, and thunder. Their longest day is nineteen hours and a half; but their shortest only four and a half. Thus, for about three weeks in midsummer, they enjoy the sight of the sun almost without intermission; but for the same space in winter, that luminary hardly rises above the horizon, and is commonly obscured by clouds and mists. In this gloomy season, the absence of day is supplied partly by moon-light. But the radiance of the Aurora Borealis contributes still more effectually to supply this want. The almost incessant corruscations of these meteors, are indeed,

sublimely beautiful; and we, who only see the extremities of these northern phænomena, have but a faint idea of their splendour and their motions, in the higher latitudes. The inhabitants are robust and hardy; the inferior classes are active and industrious, while those of superior rank are distinguished for politeness and hospitality. The Teutonic, or Pictish language, was in general use here till the last century; but, except in Foula, where a few words are still known by aged people, it is quite lost. The English language, with a Norwegian accent, is now generally spoken in these islands, although many of the inhabitants use the Norse. The principal trade of these islands is with Leith, Hamburgh, and Bergen. Their chief exports are linen, and woollen yarn, stockings, butter, dried fish, herrings, oils, feathers, with skins of various kinds, and kelp. The Orkneys are divided into 3 presbyteries, and 18 ministeries.

SHETLAND, which, with Orkney, forms one of the counties of Scotland, (Lerwick the capital,) is a cluster of islands that lie about 100 miles north-north-east of Caithness, between 59. 60. and 61. 11. N. lat. They are reckoned to be 40 in number, some of them are very small, called Holms, which produce pasture, but some are barren. The names of the principal are, Mainland, Yell, Unst, Fula, and Federfroy. Mainland is the largest, being 60 miles in length, and about 6 in breadth; exhibiting, as the other islands do, a prospect of black craggy mountains, and marshy plains, interspersed with some verdant spots, which appear smooth and fertile: neither tree nor shrub is to be seen, except the juniper and the heath; yet the mountains abound with various kinds of game; and lofty cliffs, impended over the ocean, are the haunts of eagles, falcons, and ravens. The seas abound with the finest fish. The hills are covered with sheep of a small breed, and of a shaggy appearance; but their fleece is generally very soft, and often extremely fine, as from their wool stockings have been made, that, although of a large size, a pair was capable of passing through a common gold ring. Their horses are also of a diminutive size, but remarkably strong and handsome, and are well known by the name of Shelties, from the name of the country. Many rivulets and considerable lakes abound with salmon, trout, &c. A mine of copper and one of iron, have lately been opened, near the south extremity of this island, now in the hands of the Anglesea company, and are said to be extremely productive. In all these islands the Aurora Borealis, or Merry Dancers, as they are called by the inhabitants, are very remarkable. They are the constant attendants of clear evenings, and prove great reliefs amid the gloom of the long winter nights. They commonly appear at twilight near the horizon, of a dun colour, approaching to yellow; sometimes continuing in that state for several hours, without any apparent motion: after which they break out into streams of

stronger light, spreading into columns, and altering slowly into ten thousand different shapes, varying their colours from all the tints of yellow, to the most obscure russet. They often cover the whole hemisphere, and then make the most brilliant appearance. There is no light-house in all these islands, nor is there any chart of the country extant, that can be depended upon. So many ships indeed have been lost on the east coast of Shetland, especially within the last 20 years, that it may be of essential service to recommend the erection of a light-house on Noss, a small island east of Bressay. Of these, some of the most remarkable cases are the following:—In 1775, a Liverpool ship, only 2 men saved out of 24.—In 1776, the Ceres, of London, a Greenland ship, lost with her whole crew.—In 1779, a Dutch Greenland ship, lost, only one of the crew saved.—In 1780, a Russian man of war, of 36 guns, only 5 men saved.—In 1786, the Concordia, a Danish East-India ship, with a valuable cargo, outward bound, only 15 of the crew saved.—In 1789, a Dutch Greenland ship, only 5 of the crew saved.

BUTESHIRE, consists of the island of Bute, Arran, and Inchmarnock, which lie in the Frith of Clyde, south of Argyleshire. They are fertile in corn and pastures; and there is a considerable herring fishery on their coasts. The chief town is Rothsay.

CAITHNESS, the most northerly county of Scotland, bounded on the west by Sutherlandshire; on the north by the Pentland Frith, which divides it from the Orkney Islands; and on the south-east by the German Ocean. Its greatest extent is 35 miles from north to south, and 20 from east to west. The south-west part is mountainous, and the abode of wild roes, and other animals; the rocky summits shelter eagles, and other birds of prey; and the lakes are resorted to by swans, and various water fowl. On the south-west this county ends in the promontory called the Ord of Caithness. Along the side of this steep hill, impending above the sea, a winding road has been cut, which is the only entrance into this county from the south. The climate is good, and the soil round the coast very improveable. Here the English is spoken, but in the high lands the Erse prevails.

SUTHERLANDSHIRE, a county of Scotland, bounded on the north and west by the North Sea, on the east by Caithness-shire and the German Ocean, and on the south and south-west by the Frith of Dornoch and Ross-shire. Its greatest extent from east to west is about 50 miles, and from north to south about 52. It is usually divided into Strathnavern and Sutherland Proper, the former comprehending the northern, the latter the southern part. Some parts of this county, still called forests, were anciently covered with wood, but are now trackless deserts, destitute of trees; or bleak mountains, abounding with wild roes. In these parts there are few inhabitants and no vil-

lages; but to the south-east, along the Frith of Dornoch, the country is populous, and well cultivated. Dornoch is the county town.

ROSS-SHIRE, a county of Scotland, bounded on the north by Sutherland; on the west by the sea; on the south by Inverness-shire; and on the east by the Friths of Murray and Dornoch, and the county of Cromarty. From north to south it extends near 70 miles, and about 80 from east to west. The north-west part of this county is desolate and dreary, presenting nothing to the eye but vast piles of rocky mountains, with summits broken, and aspiring into every form. The east side feeds great numbers of black cattle, horses, goats, and deer; has woods of fir of great extent, and is fruitful in corn and herbs. It has also abundance of land and sea fowl, and is well supplied with fish, particularly herrings, in the extensive lochs and bays found on the coasts. In the woods is the beautiful bird called Capercailzie, or Cock of the Wood; it is of a bright azure colour, and almost as large as a common turkey. On the tops of the mountains is found the ptarmigan, a simple bird, not quite the size of a partridge. It is often indebted for its safety to its gray colour, which resembles the stones among which it lodges. In winter its colour changes to a pure white like the snow, in which it often buries itself. The inhabitants of the west and southern parts speak the Erse language, which is also understood on the east coast, where, however, English is generally spoken. The principal towns are Tain, Dingwall, and Fortrose. The island of Lewis is included in this county.

CROMARTY, a tolerable fertile, and, of late years, well-cultivated county of Scotland, comprehending part of a peninsula, on the south coast of the Frith to which it gives name. On the south and west it is bounded by Ross-shire; and on the east by the Frith of Murray. It is 16 miles long from east to west, and about 3 miles in its greatest breadth. Its capital, Cromarty, has a manufacture of hempen cloth, which employs about 200 persons, and a considerable coasting-trade in corn, thread, yarn, fish, and skins. It is situated at or near the entrance of the Frith of Cromarty, the most safe, extensive, and commodious bay or harbour of Scotland, and one of the finest in Europe, or the world. This truly excellent, but much neglected harbour, the *Portus Salutis* of the Romans, is about 22 miles in length, and, in some parts, 4 in breadth. The entrance is narrow and bold, being formed by two huge lofty rocks, which project into the sea, till they approach within a mile of each other, and therefore defend this fine bay completely from winds and storms. These rocky promontories, or islands, thus approaching each other, and having also a similar appearance, are called by the natives, *The Sooters of Cromarty*, which, in Scottish language, means wooers or lovers. Such, in fact, is the vast extent of sea-room in this

bay, and such its length, depth, and breadth, that almost the whole British navy might ride with safety within it; and the state of the shore, or anchorage-ground, on both sides, for several miles up, is so favourable and smooth, that were a vessel driven from her cables and cast ashore, there would be little or no damage incurred. In violent easterly winds, when no vessel can venture to look into any port of the eastern coast of Scotland, from the Frith of Forth northwards, all vessels, thus situated, flock into this bay. It will appear of still greater importance, when it is known, that from Wick, in Caithness, to this frith, a distance of 60 miles, the shore is bold, rocky, and utterly unadmissible to sea-vessels of any size, the waters of Dornoch excepted; which, however, are of no great utility to navigation, by reason of shallows and quicksands.

NAIRNESHIRE, a populous county of Scotland, bounded on the north by the Frith of Murray, and inclosed on every other side by the counties of Inverness and Murray. Its extent from north to south is about 15 miles, and its breadth about 10. The soil, though rocky, is fertile, and in general well cultivated.—It contains several lakes, which abound in fish, and some forests of fir. Nairne, the county-town, is a small sea-port, exporting fish, corn, and yarn. It is seated at the entrance of the Frith of Murray, 15 miles east of Inverness, and 120 north of Edinburgh. The river Nairne separates the county of Murray from Inverness, crosses Nairneshire, and runs into the Frith of Murray, near Nairne.

INVERNESS, the most extensive county of Scotland, bounded on the west by the ocean; on the north by Ross-shire; on the east by the counties of Nairne, Murray, Aberdeen, and Perth; and on the south by those of Perth and Argyle. Its extent from north to south is about 50 miles, and from east to west 80. The northern part is very mountainous and woody. The woody mountains are the haunts of stags and roes. The capercailzie is also seen sometimes among the lofty pines; the heath is possessed by wild fowl; and the lofty summits by ptarmigans and Alpine hares. This county has several considerable lakes; being divided, in a manner, into two equal parts, by Loch Ness, Loch Oich, Loch Lochy, and Loch Eil; all which might be united by a canal, that would form a communication between the two seas. The great lakes in this county are seldom or never known to freeze; much less are the arms of the sea, even in the most northern parts of Scotland, subject to be frozen in the hardest seasons; while the Texel, and many bays and great rivers in Holland and Germany, are covered with ice. The southern part of the shire is also very mountainous, and is supposed to be the most elevated ground in Scotland. The extensive plains which surround the lakes are in general fertile; and the high grounds feed many sheep and black cattle, the rear-

ing and selling of which is the chief trade of the inhabitants. Limestone, iron ore, and some traces of different minerals, have been found in this county, with beautiful rock-crystals of various tints; but no mines have been worked hitherto with much success. The principal river is the Spey; but there are many others of inferior note, as the Ness, Fyers, Glass, Lochy, &c. The people in the high parts of the country, and on the western shores, speak Gaelic, or Erse; but the people of fashion in Inverness and its neighbourhood, use the English language, and pronounce it with propriety. Inverness, the capital, is a populous flourishing town, pleasantly situated on the south bank of the river Ness, and overlooking the Frith of Murray. It has a safe and convenient harbour, and a good deal of shipping. Several large buildings have been erected on the north side of the town, in which a considerable manufactory of ropes and canvas is carried on. It is a royal burgh, holding its first charter from Malcolm Canmore. Over the river Ness is a handsome bridge, of 7 arches. The salmon fishery in this river is very considerable, and is let to some fishmongers of London. A little to the westward of this town, is the remarkable vitrified fort, called Craig Phadrick; the stones composing its walls appear to have been partly melted by fire. Inverness is 66 miles north-east of Fort William, and 116 north-north-west of Edinburgh. Lat. 57. 30. N. long. 4. 5. W.

MURRAYSHIRE, or Elginshire, is bounded on the north by the Frith of Murray, on the east by Banffshire, on the south by a point of Aberdeenshire, and by Inverness-shire, and on the west by that county and Nairneshire. It extends from south-west to north-east about 50 miles, and along the coast about 20. Some parts of it are hilly; but its soil, for the greatest part, is rich, and produces wheat, barley, oats, and flax. The principal rivers are, the Spey, Findhorn, Lossie, and Nairne, all which abound in salmon. The county town is Elgin.

BANFFSHIRE, is bounded on the west by the county of Elgin, on the north by the ocean, and on the east-south-east and south by Aberdeenshire. From north-east to south-west its greatest length is 50 miles, and its breadth from 4 to 24.—Banff is the county-town: it is well built, on the declivity of a hill, with a harbour, often stopped by the shifting of the sands, at the mouth of the Deveron, over which there is a handsome bridge of 7 arches. It is 45 miles north-west of Aberdeen.

ABERDEENSHIRE, contains the districts of Mar, Garioch, Strathbogie, and the greater part of Buchan. Its length from north-east to south-west, is about 90 miles, and its breadth nearly 38. It is bounded on the west by Inverness-shire, on the north-west by Banffshire and the river Deveron; on the north and north-east by the German Ocean; and on the south by the counties of Kincardine, Angus, and Perth. There is much excellent pas-

ture in the high parts; and the level tract, Strathbogie, contains many well-cultivated fields. Aberdeen, the capital, is the third city in Scotland for trade, extent, and beauty. It is formed of the Old and New towns; the former, which is about a mile north of the New, is situate on the Don, over which there is a lofty Gothic bridge of one arch, resting at each extremity on two rocks; the latter is on the Dee, over which there is a bridge of 7 arches. There is good anchorage in the bay, a harbour in each river, and salmon in all. The situation is hilly; it has a spa and baths. Its university, consisting of King's College in the Old Town, and Marischal College in the New, has produced many learned men. The manufactures are stockings, cotton, thread, &c. which they export, together with excellent salmon, oatmeal, and pickled pork, &c.: besides the coasting trade, vessels are sent hence in time of peace to France, Spain, Portugal, and the northern states of Europe: the inhabitants, including the Old Town, are estimated at 35,000. A strong pier, forming an excellent harbour for vessels of moderate size, was erected here some years ago, under the direction of Mr. Smeaton, on the north side of the harbour of New Aberdeen. This pier is 1200 feet in length, and gradually increases in thickness and height as it approaches to the sea, where the head, or rounding, is 60 feet in diameter at the base, and the perpendicular elevation is 38 feet. To the south of the bar, they have now a depth of 17 fathom at low water; and at the harbour mouth from 8 to 9 fathom, where they had formerly but a few feet. The whole is built of granite, the most durable stone known; and many of the outside stones are above three tons in weight, with hewn beds. Aberdeen is 121 miles north-east of Edinburgh, in lat. 57. 6. N. long. 2. 8. W.

KINCARDINESHIRE, or Mearns, is bounded on the north by Aberdeenshire, on the east by the German Ocean, on the west by the counties of Angus and Aberdeen, and on the south by that of Angus. Its length along the coast is scarcely 30 miles, and its mean breadth about 20. The county in general is pretty level, producing plenty of corn and pasture. It is watered by several rivers, and there are many convenient harbours on the coast. Inverbervie and Stonehaven are the principal towns; the latter of which is 14 miles S. by W. of Aberdeen.

ANGUS-SHIRE, sometimes called Forfar, from the name of the county-town, is bounded on the north by Aberdeenshire, on the north-east by Kincardineshire, on the east by the German Ocean, on the south by the Frith of Tay, and on the west by Perthshire. It is about 48 miles in length, and 42 in breadth. It has many lakes and hills, with quarries of slate and freestone, and mines of lead and iron ore; the lower grounds are fertile in corn and pasture; and along the coast the salmon fishery is very extensively carried on. The principal rivers are the North and South Esk.

PERTHSHIRE, is bounded on the north by the shires of Inverness and Aberdeen, on the east by Angus-shire and the Frith of Tay, on the south-east and south by the counties of Fife, Kinross, Clackmannan, and Stirling, and on the west by those of Dumbarton and Argyle. It extends about 76 miles from north to south, and upwards of 68 from east to west. The northern district, called Athol, is uncommonly wild and mountainous; the five others, viz. Braedalbane, Gourie, Monteith, Stormont, and Strathern, are more champaign, and fertile in corn and pasture. Perth, the capital, is a very handsome town. It consists, chiefly, of one wide street, well paved, but ill built; from which two others branch off, at right angles, on each side. The kings of Scotland before James II. in 1437, were crowned at Scone, and generally resided at Perth, as the metropolis of the kingdom. The town is supposed to have increased more than one-third in buildings since the year 1745.—The manufactnre of linen and cotton here is very considerable; 150,000l. being annually exported, with about 50,000l. worth of salmon, and 10,000l. worth of wheat and barley. Perth is agreeably seated (with a beautiful approach to it) on the western bank of the Tay, which is here crossed by an elegant stone bridge of 9 arches, (to which the tide comes up, the river being navigable for small vessels,) 35 miles north-north-west of Edinburgh.

FIFESHIRE, is bounded on the north by the river Tay, part of Perthshire, and the county of Kinross; on the east by the German Ocean, and the Frith of Forth; on the south by the Frith of Forth; and on the west by the counties of Perth, Kinross, and Clackmannan. It is about 34 miles in length, and from 7 to 16 in breadth. This county is fertile in point of soil, abundant in cattle, supplies coal, iron, lime, and freestone; is uncommonly populous and has a number of flourishing manufactures. The whole shore, indeed, from Crail to Culross, is one continued chain of towns and villages, and property is remarkably well divided here.

KINROSS-SHIRE, is surrounded by the shires of Perth and Fife. It is about 30 miles in circuit, its length and breadth being nearly equal. Kinross, the principal town, is seated on the river Leven, not far west of Loch Leven, and 23 miles north of Edinburgh; the manufactures of which are linen and cutlery-ware.

CLACKMANNANSHIRE, is surrounded by Perthshire, unless on the west, where it is separated from Stirlingshire by the Forth. It is 10 miles in length and 8 in breadth, and produces good corn and pasture, and plenty of coals and salt. The chief town is Clackmannan (in a tower of the castle of which are preserved the great sword and helmet of King Robert Bruce, and a large two-handed sword of Sir John Graham, the friend of the heroic Wallace,) which is situated on the north shore of the Frith of Forth, 7 miles south-east of Stirling.

STIRLINGSHIRE, is bounded on the north and north-east by Perthshire and Clackmannanshire, on the east by the Frith of Forth and the county of Linlithgow, on the south by Lanerkshire, and on the west by Dumbartonshire. It is about 25 miles in length, 8 or 9 in its general breadth, and not more than 16 in its greatest. The southern parts are mountainous, but the parts about the Forth are fertile, and abound in coals. The principal rivers are the Forth, (which receives a great number of smaller streams,) Carron, and Avon; besides which, the new canal from Glasgow runs through this county to the Carron mouth. The principal towns are Stirling and Falkirk. Stirling, the county-town, is seated on the south side of the Frith of Forth, on a hill, which, rising from the east, terminates abruptly in a steep rock. On this rock is an ancient castle, which was often the residence of the kings of Scotland. The outside of the palace, which is now converted into barracks, is richly and curiously adorned with various grotesque figures. From the castle is a fine view of the windings of the Forth, which are so numerous, that the distance from Stirling to Alloa is above 20 miles by water, although only 4 by land. The church of Stirling is a magnificent Gothic structure, which serves for two separate places of worship. In this town and its neighbourhood are flourishing manufactures of carpets, as also of coarse shalloons and cottons; but that of tartans has been on the decline. Stirling is commodiously seated, being a pass between the north and south parts of Scotland, but with such a difficult navigation of its river, that only small vessels can come up to the town; which is 30 miles north-west of Edinburgh.

DUMBARTONSHIRE, anciently Lennox, is bounded on the west by Argyleshire and Loch Loung, on the north by Argyleshire and Perthshire, on the east by Perthshire and Stirlingshire, and on the south by the counties of Lanerk and Renfrew. Its greatest length is 50 miles, and its breadth from 6 to 15. The west part of this county abounds with morasses; in other parts it is fertile in corn and pastures; but the principal riches arise from the fisheries in the lochs in and about its coasts; the principal of these is Loch Lomond. Its capital, Dumbarton, is a large ancient town. Its principal manufacture is crown and bottle glass, but many of the young women are employed in the neighbouring print-fields, on the banks of the Leven. Close to the river is a castle, built on a vast rock, formerly deemed impregnable. This town was erected into a royal burgh by king Alexander II. 1221. About 2000 tons of shipping belong to this place, which has a harbour for large brigs secure in all weathers. It is situated at the confluence of the rivers Leven and Clyde, 15 miles north-west of Glasgow.

ARGYLESHIRE, or Inverary, is bounded on the north by Inverness-shire, on the east by the counties of Perth and Dum-

barton, on the south and west by the Atlantic Ocean, by which it is broken into islands and peninsulas, with bays and inlets, which afford good harbours for shipping; and the country is well watered with rivers and lakes, which yield abundance of fish. It is about 114 miles long, from the Mull of Cantyre to its north-east extremity; its breadth is unequal, about 40 miles where greatest, and in some parts only 1 or 2. To the north-west is a peninsula, detached from the rest of the county; it contains the districts of Ardnamurchan, Morven, Sunart, and Ardgowar; the two last remarkable for numerous veins of lead, which, however, are not very productive. The peninsula of Cantyre, and Cowal, are likewise very large. A great part of the country abounds with rocks, frightful precipices, and stupendous mountains, apparently piled one upon another; yet, even in the high grounds, the soil, though little fitted for cultivation, affords excellent pasture. Inverary is the county-town. Here are manufactures of linen and woollen, as also considerable works for smelting iron by means of charcoal. One ship belonging to the town is engaged in foreign trade, and about half a dozen are employed in imports of meal, coals, merchants' goods, &c. exporting wood, timber, and oak bark. It is seated on the north-west side of Loch Fyne, near which is a castle, the seat of the duke of Argyle, 88 miles north-west of Edinburgh, and 45 north-west of Glasgow.

RENFREWSHIRE, is bounded on the west and north by the Frith of Clyde, on the east by Lanerkshire, and on the south and south-west by Ayrshire. The northern parts towards the Clyde are fertile, with some gentle uplands; those to the south and south-west are more barren, mountainous, and moorish. This county was the paternal inheritance of the Stuarts, before they ascended the throne, and still gives title of baron to the Prince of Wales. Renfrew, the capital, has some inconsiderable manufactures of thread. The magistracy is composed of a provost, 2 bailiffs, and 16 counsellors. It is seated on the south side of the river Clyde, 11 miles west of Glasgow.

AYRSHIRE, is a large commercial county, bounded on the west-north-west and north by the river Clyde and Renfrewshire, on the east by the counties of Lanerk and Dumfries, and on the south-east and south by the shires of Kirkcudbright and Wigton. It is about 56 miles in length, and from 20 to 26 in breadth; it is divided into 45 parishes. It exhibits the shape of two wings, extending to the north-west and south-west, and forming a large bay south of the Frith of Clyde. Ayr, the principal town, is a sea-port, situated on a sandy plain, and built on both sides of the river Ayr, which rises on the borders of Lanerkshire, and, crossing the county to which it gives

name, runs into the Clyde, near the town of Ayr. Its waters possess a petrifying quality, and wood petrified in it makes excellent hones for razors. Over it there is a bridge of 4 arches, in the middle of the town. The inhabitants carry on a considerable trade in coals and grain, and there is a profitable fishery of cod and haddock on the coast; they have also flourishing manufactures of cotton, iron, tambour-works, &c. The market-cross here is a valuable relic of antiquity, purporting by the date which it bears to have been built in 1055. It is 76 miles south-west of Edinburgh. The celebrated poet Burns was born and buried here.

WIGTONSHIRE, sometimes called Upper or West Galloway, is bounded on the N. by Ayrshire, on the E. by Kirkcudbright, and on the S. and W. by the Irish Sea. Its greatest extent does not exceed 30 miles. The north part, called the Moors, is naked and mountainous. Great numbers of sheep and black cattle are reared here; and they have a small breed of horses peculiar to this district, called *galloways*, which are very strong and gentle. It is well watered with lakes and streams, and has several commodious creeks and harbours. Wigton, the county-town, is a sea-port. Here are some manufactures of plaid and flannel. It is situated on a large bay, to which it gives name, 32 miles west of Dumfries.

KIRKCUDBRIGHTSHIRE, once formed, together with the county of Wigton, the ancient province of Galloway. It is bounded on the north-east by Ayrshire and Dumfries-shire, on the south by the Solway Frith and the Irish Sea, and on the west by Wigtonshire and Ayrshire. Its extent from north to south is nearly 30 miles, and from east to west about 45. It has great plenty of fine pasture, and numerous flocks of sheep and small cattle. Kirkcudbright, the county-town, is a sea-port, seated at the mouth of the river Dee, 25 miles south-west of Dumfries, and 83 south-west of Edinburgh. It has a fine harbour, with depth of water sufficient to admit ships of any burden to come up to the town, and yet has but an inconsiderable trade. The town consists of two streets, which form a right angle with each other, having, in the centre, the town-house.

DUMFRIES-SHIRE, is bounded on the west by the counties of Kirkcudbright and Ayr; on the north by the shires of Lanerk, Peebles, and Selkirk; on the north-east and east by those of Selkirk and Roxburgh; and on the south by Solway Frith and a part of Cumberland. It is about 50 miles in length, and from 10 to 26 broad. It comprehends the districts of Annandale, Nithsdale, and Eskdale. The capital of the county is Dumfries, a well-built town, surrounded on all sides, at the distance of a few miles, by a continued chain of hills, forming altogether one of the grandest natural amphitheatres in Britain. They

have 8 or 10 coasting vessels, and 2 or 3 employed in the Baltic and wine trades. It is seated on the river Nith, 8 miles north of Solway Frith, and 72 south-west of Edinburgh.

ROXBURGHSHIRE, sometimes called Teviotdale, and containing the districts of Teviotdale, Liddesdale, Eusdale, and Eskdale. It is bounded on the north by Berwickshire, on the east and south by the English counties of Northumberland and Cumberland, and on the west by the shires of Dumfries and Selkirk. From north to south it extends near 30 miles, and about 18 from east to west. The principal rivers are the Tweed, Teviot, and Liddel; the principal mountains are those called the Cockraw, whence a range of high hills runs westward, dividing Scotland from England, in many places impassable. The face of the country exhibits a rough irregular appearance of mosses, hills, and mountains, interspersed with narrow vallies, well watered, and fertile in corn and oats. The hills, however, feed great numbers of sheep and cattle. On its borders were the famous *Battle, Battable,* or *Debateable Lands,* claimed by the borderers of both nations. The principal towns are, Jedburgh, Kelso, Hawick, Melross, and Roxburgh; which last town, with its castle, is situated near the Teviot, 19 miles south-west of Berwick, and 32 south-east of Edinburgh.

SELKIRKSHIRE, is bounded on the north by Edinburghshire and Berwickshire, on the east by Roxburghshire, on the south by Dumfries-shire, and on the west by Peebles-shire. It is about 28 miles long, and from 8 to 18 wide. It is a hilly country, yielding pasture to innumerable flocks of sheep and black cattle, but the vallies bear good crops of hay and corn. The rivers abound with fish, and the woods with game and birds, both of song and of prey. The principal rivers are the Tweed, the Ettrick, the Yarrow, and the Gala. Selkirk is the county-town. Here is a manufacture of boots and shoots, which has been long established, and another of inkle. Some trophies brought away from Flodden Field, by the citizens of Selkirk, have survived the rust of time, or the effects of negligence, and are still preserved here. It is seated on the river Ettrick, 30 miles south-south-east of Edinburgh. Lon. 2. 46. W. lat. 55. 34. N.

PEEBLES-SHIRE, or Tweedale, is bounded on the north and north-east by Edinburghshire, on the east by Selkirkshire, on the south-east and south by the counties of Selkirk and Dumfries, and on the west by that of Lanerk. It is 30 miles long from north to south, and from 10 to 12 broad. In this county there is little arable land, yet they sow some oats and barley. Its hills (among which are the rugged and heathy mountains of Tweedsmuir, in the south of the county,) abound with salubrious springs, and between them are fertile well-watered vallies, which feed numbers of sheep and cattle. There are few plantations,

except round particular houses. The principal rivers are the Tweed, Lynne, and Yarrow. Peebles, an ancient town, is the capital, which has a manufacture of carpets and serges, and a weekly market for corn and cattle. It is seated on a small river called Peebles, which soon after joins the Tweed, 22 miles south of Edinburgh.

LANERKSHIRE, is bounded on the north and north-east by the counties of Dumbarton, Stirling, Linlithgow, and Edinburgh, on the east by the counties of Peebles and Dumfries, on the south by Dumfries-shire, and on the west by the shires of Ayr and Renfrew. Its extent from north to south is about 48 miles, and its mean breadth about 30. The southern part of this county is generally called Clydesdale. The river Clyde divides this county into two equal parts, called the shire of Lanerk, and the barony of Glasgow: the one hilly, heathy, and fit for pasture; and the other level, and proper for corn. It abounds with coal and lime-stone; has some lead mines, and quarries of lapis lazuli. The principal rivers are the Clyde, Annan, and Tweed. Lanerk, the county-town, is seated on the north-east side of the river Clyde, 22 miles south-east of Glasgow.

LINLITHGOWSHIRE, or West Lothian, is bounded on the west by Stirlingshire, on the north by the Frith of Forth, on the east by Edinburghshire, and on the south and south-west by Lanerkshire. It is about 17 miles long, and 8 in its mean breadth. It abounds with corn and pasture, and has also plenty of coal, lime-stone, lead-ore, salt, and river fish. Linlithgow, the county-town, is an ancient, large, regular, and well-built place, and stands on a rising ground, near a lake, remarkable for bleaching. It is 17 miles west of Edinburgh.

EDINBURGHSHIRE, or Mid Lothian, is a populous, well-cultivated, fertile, and pleasant county; 27 miles in length, and 16 in breadth, but in some places not above 6. It is bounded on the north by the Frith of Forth, which separates it from Fife-shire; on the east by the shires of Haddington and Berwick; on the south by those of Selkirk, Peebles, and Lanerk; and on the west by the shire of Linlithgow. Edinburgh city is the capital of this county, as well as of all Scotland, and is situated on three hills. It may properly be divided into the Old and New Towns. The situation of the Old Town is singular and striking: it stands on the middle ridge, or hill, which is narrow and steep, and terminated abruptly on the west by the castle, a very ancient building, accessible only by a draw-bridge, and erected on a lofty precipitous rock. The High Street, a mile in length, and generally 90 feet broad, extends from the castle to Holyrood House. On each side of this steep hill the houses form narrow lanes, which are called closes, and extend north and south. Many of them are lofty, but so piled, as it were, upon each other, that they are neither commodious nor elegant. The New Town is situated on

the north side of the Old, on an elevated plain, from which the ground descends to the south and north with a gentle declivity. It forms an assemblage of uniform streets and squares, including several public buildings, the whole built entirely of stone with considerable taste and elegance. The buildings on the south side of the Old Town, though inferior to those on the north, are extensive and stately. The most striking object here is the New College, built by public subscription, on the site of the old one, on a magnificent plan. The number of students in the university is generally estimated at 1000, of whom 400 study medicine. The city is governed by a lord provost, a guild council, and 25 common council. Here are 14 incorporated trades, each having its deacon, or warden. The principal public buildings are, the palace of Holyrood House; the Royal Exchange, built in 1753; the Register Office; the Physician's Hall; Heriot's Hospital, founded in 1628, for the education of 140 poor boys; Watson's Hospital, for the sons of decayed merchants; an Hospital for Orphans; and a Royal Infirmary, incorporated by charter in 1736. Edinburgh is supplied with water, conveyed in cast-iron pipes from Commiston, 4 miles to the west. It is 2 miles south of Leith, which is its port, 54 north-north-west of Berwick-upon-Tweed, and 377 north by west of London. Lat. 55. 58. north, lon. 3. 7. west.

HADDINGTONSHIRE, or East Lothian, is bounded on the west by Edinburghshire, on the north by the Frith of Forth, on the east by the German Ocean, and on the south by the county of Berwick. It is about 25 miles long from east to west, and 15 miles where broadest. The land is in many places doubly productive, affording immense quantities of coal, while rich crops of corn are raised on its surface. The southern part of the county, comprehending the north side of Lammermuir Hills, is mountainous. These high grounds, however, feed vast numbers of sheep. On the sea-coast are several harbours and fishing-towns; salt is made in many places, and the country in general is populous and rich. Haddington, the county-town, is an ancient and populous place, with a manufacture of coarse woollens, established here for several centuries past. It consists of 4 streets, which intersect each other nearly at right angles. John Knox, the celebrated reformer, was a native of this town. It is seated on the river Tyne, 16 miles east of Edinburgh.

BERWICKSHIRE, sometimes called the Mers, is bounded on the west by the shires of Edinburgh and Selkirk, on the north-west by Haddingtonshire, on the east by the German Ocean, and on the south-east and south by the Tweed and Roxburghshire. It is 34 miles long, and 19 broad. The principal rivers are, the Tweed, Leader, Blackadder, Whiteadder, Eye, and Ednel.

BERWICK, a town on the borders of England and Scotland, properly belonging to neither. It is a town and county of itself; it is large, populous, well built, and regularly fortified; the old castle, however, is gone to decay. Berwick has very considerable fisheries of salmon; exports wool, and eggs, collected through all the country, in vast abundance, to London, for the use of sugar-refiners. They also import timber from Norway and the Baltic. It is seated on the Tweed, over which there is a handsome bridge of 15 arches, 54 miles south-east of Edinburgh, 147 north of York, and 337 north by west of London; has two markets in the week, on Wednesday and Saturday; and a fair on Friday in Trinity-week, for black cattle and horses.

IRELAND, one of the British Islands, lying to the west of that of Great Britain. It is bounded on the east by St.George's Channel, or the Irish Sea, which separates it from England and Wales; on the north-east by a channel about 20 miles broad, which separates it from Scotland; and on every other side by the Ocean. It lies between lon. 5. 43. and 10. 38. W. and between lat. 51. 15. and 55. 13. N. being about 280 miles in length, and 160 in breadth. It is divided into 4 provinces, viz. Ulster on the north, Munster on the south, Leinster on the east, and Connaught on the west. These are subdivided into 32 counties, viz. Carlow, Dublin, Kildare, Kilkenny, King's County, Longford, Lowth, Meath, Queen's County, West Meath, Wexford, and Wicklow, in the province of Leinster. Antrim, Armagh, Cavan, Down, Donegal, Fermanagh, Londonderry, Monaghan, and Tyrone, in the province of Ulster. Clare, Cork, Kerry, Limerick, Tipperary, and Waterford, in the province of Munster. Galway, Leitrim, Mayo, Roscommon, and Sligo, in the province of Connaught. The air of this island is mild and temperate, being cooler in summer, and warmer in winter, than in England; though it is not so clear and pure, nor so proper for ripening corn and fruits. It is more humid than in England; but this quality is pretty much mended, and will be more so, when the bogs and morasses are drained. In general it is a fruitful country, well watered with lakes and rivers; and the soil in most parts is very good and fertile; even in those places where the morasses have been drained, there is good meadow-ground. It produces corn, hemp, and flax, in great plenty; and the herds of cattle are so numerous, that their beef and butter are exported into foreign parts; the English and foreign ships frequently come to victual in Irish ports. The principal riches and commodities of Ireland are, cattle, hides, wool, tallow, suet, butter, cheese, wood, salt, honey, wax, furs, hemp, and more especially fine linen cloth, which they have brought to great perfection, and their trade in it is vastly increased: they have also made some progress in the cotton manufacture. This country is exceedingly

well situated for foreign trade, and has many secure and commodious bays, creeks, and harbours, especially on the west coast.—Their laws differed but little from those of England; and the national establishment of religion was the same. The members of parliament usually sat for life, unless upon the demise of the king of Great Britain; but in 1763, their parliaments were made octennial. Formerly, this country was entirely subordinate to that of Great Britain, whose parliament could make laws to bind the people of Ireland; and an appeal might be made from their courts of justice to the house of lords in England; but, in 1782, it was declared, that although Ireland was an imperial *crown*, inseparably annexed to that of Britain, (on which connection the interest and happiness of both nations essentially depended,) yet the *kingdom* of Ireland was distinct, with a parliament of its own, and that no body of men were competent to make laws for Ireland, except the king, lords, and commons thereof. And some time after, this declaration being thought insufficient, the British legislature, by an express act of parliament for that purpose, relinquished all claim of right to interfere with the judgment of the Irish courts, or to make laws to bind Ireland in time to come. However, from the circumstances of the times, in 1801, a legislative Union between Great Britain and Ireland took place, (after strong parliamentary opposition in both countries,)by which the two kingdoms were made one, under the title of the United Kingdom of Great Britain and Ireland. In consequence of which Ireland now sends 4 spiritual and 28 temporal lords, and 100 commoners, to represent it in the same house of parliament with those of Great Britain. The lord lieutenant of Ireland, as well as the council, are appointed, from time to time, by the king. The native Irish are described as impatient of abuse and injury, quick of apprehension, implacable in resentment, ardent in all their affections, and remarkably hospitable. In the country there certainly remains a great deal of this amiable national characteristic, and even in their towns, formality and etiquette are often so lost in hearty salutations, and a familiar manner of address, that the stranger soon feels himself at home, and imagines the people about him all relations. There are some considerable mountains in Ireland, the chief of which are, Knock Patrick, Sliew Blockmy, and Curliew Hills. Of all its bogs, that called the *Bog of Allen* is the most considerable. The chief lakes are, Lough Lean, Lough Erne, Lough Neagh, and Lough Coribb; and its principal rivers are, the Shannon, Lee, Boyne, Barrow, Liffey, Nore, Suir, and Lagan. This country is said to have been formerly full of woods; but the case is now so different,that it has been found necessary to plant new ones, and to give parliamentary encouragement for their preservation and increase. —The mineral productions of Ireland have been little known till late years, the natives in general having given themselves

(at least for some centuries past) little trouble about them. Nevertheless, copper, lead, iron, and even silver ores, have been found in the Irish mines; some vestiges of works of this sort appear at Clontarf, on the edge of Dublin Bay. In the county of Antrim, there is a mine which consists of a mixture of silver and lead, every 30lb. of lead ore producing about a pound of silver. There is another in Connaught, of the same kind; and one still richer in Wicklow. About 12 miles from Limerick, two mines have been discovered, one of copper and the other of lead. Iron mines are dispersed all over the kingdom. There are likewise quarries of marble, slate, and freestone, and the earth produces in various places coal and turf, for fuel. The counties are particularized as follow:

CARLOW, or Catherlough, a county in the province of Leinster, 28 miles in length, and 18 at its greatest breadth. It is bounded on the west by the Queen's County, on the north and north-east by Kildare and Wicklow, on the east by Wicklow and Wexford, and on the south, south-east, and south-west, by Wexford and Kilkenny. It contains 49 parishes. Its chief town is Carlow, a neat town, seated on the east side of the river Barrow, by which it communicates with Waterford river and the Grand Canal, 20 miles north-east of Kilkenny.

DUBLIN, a county of Leinster, is 27 miles in length, and 17 in breadth, bounded on the north by Meath, on the east by the Irish Channel, on the south by Wicklow, and on the west by Meath and Kildare. The soil is rich, and fertile in corn and pasture. It contains 106 parishes, 20 of which are in the city of Dublin, and 4 market-towns. Dublin is the capital of Ireland, and is a large, handsome, and populous city, seated on the river Liffey, or Anna Liffey. The appearance of this metropolis, the Bay of Dublin, and the surrounding country, on approaching them from the sea, is grand and beautiful; after passing the Isle of Lambay, and that of Ireland's Eye, which is small, being a lofty and grotesque-looking rock, and the craggy mountain called the Hill of Howth, in coming from the north; or, after passing the rocky cliffs of Bray, in approaching from the south, the extensive Bay of Dublin opens on the view; on the left are seen the hills and mountains of Wicklow; on the right, the gentle-rising shores of Clontarf; the city on a rising ground, at the extremity of the bay, and at several miles distance, with domes and spires, terminates the view. The Cassoon, a beautiful pharos, or light-house, 4 or 5 miles from the city, seems, like another Eddystone light-house, to rise out of the sea; from this, however, there is a broad and firm wall, or pier, reaching to Ringsend, to which the city is now nearly extended. On the north side of the wall is the harbour, where vessels lie safe at anchor, with an open sea to the north. On the

south side of the wall, near the town, are wharfs, principally used for bathing; and between these and the opposite shore is an extensive and smooth strand, which is dry at low water; there is a wharf also on the north side of the river, for the purpose of bathing, and elegant baths on both sides of the water. From Ringsend upwards, through the whole city, the river is embanked with quays on both sides; as these are open nearly through their whole extent, they form beautiful walks of very extensive range. The docks laid out on each side of the river, are sufficiently capacious to hold several thousand of vessels. The streets of Dublin are pretty regular, and well paved, the squares spacious and elegant, and the public buildings superb. The city is supplied with water by means of pipes; and public founts are erected in convenient places. A circular road, about 10 or 12 miles in length, encompasses the city, and the country around it is pleasant. There is not yet in Ireland, as in England, a parochial provision for the poor; but there are, throughout the country, institutions for their relief, supported by voluntary contributions; and of this sort is the House of Industry in Dublin. Since the Union took place, the trade and population of this city has been rather on the decline; but it is nevertheless expected, that this temporary loss to the capital will in time be amply compensated by the general prosperity of the country, likely to result from that measure. The Bar at the entrance of the harbour renders the approach of large vessels difficult and dangerous; some improvements, however, have been for some time past projecting, to remedy this great defect. Dublin lies in lat. 53. 23. N. lon. 6. 17. W.

KILDARE, a county in the province of Leinster, 37 miles in length, and from 12 to 24 in breadth. It is bounded on the west by King's and Queen's Counties, on the north by Meath, on the east by Dublin and Wicklow, and on the south by Carlow. It is a fine, arable, fertile country, well watered by the Barrow, Liffey, Boyne, and other rivers. Kildare is the county-town; and is chiefly supported by frequent horse-races, on what is called the *Curragh*, (a fine plain, containing upwards of 5000 acres,) which feeds a great number of sheep, and is 32 miles south-west of Dublin.

KILKENNY, a county of Leinster, is 40 miles in length, and 20 in breadth, and is bounded on the west by Tipperary, on the north by Queen's County, on the east by Carlow and Wexford, and on the south by Waterford. It contains 147 parishes. The surface is generally level, and the soil fertile, and being proper for tillage, produces corn, wool, marble, and a species of coal, which, like charcoal, burns without smoke, is very durable in burning, and, without any blaze, produces an uncommon heat. The county abounds with fine plantations, and is, from the purity of the air, esteemed extremely healthful. The principal rivers

are, the Barrow, which bounds it on the east, the Suir, which forms its southern boundary, and the Nore, which crosses it from north to south. Kilkenny, the capital, is an ancient city, very populous, with tolerable trade. It has a small cathedral, and is one of the neatest towns in the kingdom. The borough of St. Canice, or Irish Town, is joined to English Town, which is the principal, and both together form one large town. The manufactures chiefly carried on here are, coarse woollen cloths, blankets of extraordinary fine quality, and considerable quantities of starch. The houses are decorated with a beautiful black and white marble, dug from quarries near the town, and which is cut and polished by water-mills. It is seated on the river Nore, over which it has 2 handsome bridges, 30 miles north of Waterford, 65 north-east of Cork, and 57 south-west of Dublin. Lat. 52. 36. N. lon. 7. 18. W.

KING'S-COUNTY, a county in the province of Leinster, is 38 miles in length, and from 17 to 30 in breadth; bounded on the north by West Meath, on the east by Kildare and Queen's-County, on the south by Queen's-County and Tipperary, and on the west by the river Shannon and a part of Tipperary. The soil is various; in some parts it is very fertile, in others not so rich, nor so well inhabited as some other counties. It contains 52 parishes. Philipstown, the capital, is 17 miles north of Maryborough, and 42 south-south-west of Dublin.

LONGFORD, a county of Leinster, is about 25 miles in length, and 16 in its greatest breadth; bounded on the west by the river Shannon, on the east and south by West Meath, and on the north and north-west by Leitrim and Cavan. It contains 23 parishes, and is a rich and pleasant country, in general flat, in some places apt to be overflown by the Shannon, and towards the north mountainous. A considerable quantity of linen is manufactured in this county, and large quantities of flax are sent to other parts. Longford, the capital of this county, is seated on the river Cromlin, or Cammin, which falls into the Shannon a few miles below, and is 74 miles north-west by west of Dublin.

LOUTH, a county of Leinster, is about 29 miles in length, and from 9 to 13 in breadth; bounded on the west by Monaghan and Meath, on the north by Armagh and Carlingford Bay, on the east by St. George's Channel, and on the south by Meath, from which it is parted by the river Boyne. It is the smallest county in Ireland, but very fertile and pleasant, and contains 61 parishes. Its chief town is Dundalk; the other principal towns are Carlingford, Drogheda, Ardee, and Dunleer. It sends 4 members to parliament.

MEATH, a county in the province of Leinster, is 36 miles from north to south, and from 25 to 35 from east to west; and is bounded on the north by Cavan and Louth, on the east by

the Irish Channel, on the south by Kildare and Dublin, and on the west by Longford and West Meath. It contains 147 parishes, and is a fine champaign country, abounding with corn, and fattening numerous flocks and herds. The bogs are neither numerous nor extensive. Much coarse linen is made in this county. Trim, the county-town, is seated on the river Boyne, 22 miles north-west of Dublin.

QUEEN'S-COUNTY, a county in the province of Leinster, about 25 miles square; bounded on the north and west by King's-County and part of Tipperary, on the east by Kildare and part of Carlow, and on the south by Kilkenny. It was formerly full of woods and bogs, but is now much improved. It contains 51 parishes. Maryborough, a small place, is the county-town, which is considerable for its woollen manufactures, and is 47 miles south-south-west of Dublin.

WEST MEATH, a county of Leinster, is bounded on the west by Longford and Roscommon, on the north by Longford and Cavan, on the east by Meath and Kildare, and on the south by King's-County. Its greatest length is 33 miles; its greatest breadth 24. It contains 59 parishes, and, besides Lough Ree, formed by the Shannon on its western extremity, it is watered by a number of other agreeable lakes; as, the loughs Legin, Derrivarragh, Iron, Ennel, Drin, and Bannean Annagh, the rivers Inny, Brosna, &c. Here is a great proportion of grass-land, yet more corn is raised than serves for the consumption of the inhabitants. The chief town is Mullingar, where a great wool-mart, or fair, the second in Ireland, is held. It is a place of good trade, and is seated on the river Foyle, 45 miles north by west of Dublin.

WEXFORD, a county in the province of Leinster, is about 38 miles in length, and 24 in breadth; bounded on the north by Wicklow, on the east by St. George's Channel, on the south by the Atlantic Ocean, and on the west by Carlow, Waterford, and Kilkenny. Though not mountainous, it contains a large proportion of coarse cold lands, and stiff clay; yet many parts thereof are fertile in corn and grass. The principal rivers are the Barrow and Slaney. It contains 109 parishes. Wexford is the county-town. Adjoining it is the Barony of Forth, the inhabitants of which, descendants of an ancient British colony, retain their native language, manners, and many singular customs, till this day. Wexford was once reckoned the chief city in Ireland, being the first colony of the English, and is still a large handsome town, with a beautiful and commodious harbour, but not deep enough for large vessels. Much woollen cloth is manufactured in the town and neighbourhood. It is seated at the mouth of the river Slaney, 76 miles south of Dublin. Lat. 52. 18. N. lon. 6. 29. W.

WICKLOW, a county of Leinster, is bounded on the north by the county of Dublin, on the east by the Irish Channel, on the south by Wexford and a part of Carlow, and on the west by Kildare and Carlow. It is about 33 miles in its greatest length, and from 15 to 20 in breadth. It contains 58 parishes. Much of it is mountainous and woody, with a mixture of rocks and bogs, yet affording beautiful and romantic views: the vallies, however, are fertile, and well cultivated. In the hills rich veins of copper and other minerals are found; and lately considerable quantities of gold have been discovered. Wicklow, the capital, is seated on the sea-side, with a narrow harbour, at the mouth of the river Leitrim, 28 miles south-south-east of Dublin. It is remarkable for having the best ale in the kingdom, which, with other provisions sent to Dublin, form the principal part of its trade. About a mile and a half to the south-east is Wicklow-Head, on which there are two light-houses.

ANTRIM, a county in the province of Ulster, is bounded on the north and east by the sea, on the south by the county of Down, and on the west by the counties of Londonderry and Tyrone. It is 46 miles long, and 27 broad. The country is pretty fruitful, and the linen manufacture is carried on here very extensively, to the supposed amount of 263,300l. The principal river is the Bann. Antrim, the capital of the county, is a small trading town, situated at the north-east end of Lough Neagh, 16 miles west of Carrickfergus, and about 84 miles north of Dublin.

ARMAGH, a county of Ulster, is bounded on the west by Tyrone and Monaghan, on the north by Tyrone and Lough Neagh, on the east by Down, and on the south and south-east by Louth and Monaghan. Its soil is rich and well cultivated, the ridge of mountains, called the Fewes, excepted, which runs across it. It is a great linen county, its trade therein being estimated at 291,900l. annually. It is 32 miles long, and 19 broad. Armagh is the county-town, where the assizes are held, and the see of an archbishop, who is primate of all Ireland. Here is a noble school, a royal foundation; also a public library, and an observatory, endowed with a liberal income for an astronomer. The town, which is also a borough, and governed by a mayor, &c. is extensive, and remarkably seated on all sides of a lofty hill, upon the summit of which stands the ancient Gothic cathedral, originally founded by St. Patrick, a remnant of an hieroglyphic square column, erected to his memory, being yet standing on the out-end of the west aisle of the church; and in the north aisle is a beautiful well-executed white marble monument, with a full figure of the famed doctor Drelincourt, who was dean of Armagh, besides some others deserving notice. It is about 52 miles south-east

of Londonderry, and 76 north of Dublin. Lat. 54. 27. N lon. 6. 57. W.

CAVAN, a county of Ulster, is bounded on the west and south-west by Leitrim and Longford, on the north-west and north by Fermanagh and Monaghan, on the north-east by Monaghan, and on the east and south by E. and W. Meath; is about 47 miles long, and 23 broad, and contains 39 parishes. In many parts it is open, bleak, and dreary; but from Cavan to Lough Erne it is fertile, well wooded, and extremely picturesque. At the foot of the hills are many beautiful lakes, mostly small, but some of a larger size. The linen manufacture is carried on in it pretty extensively, its yearly trade in it having been averaged at 68,200l. Its capital, Cavan, has barracks for a troop of horse, and is 68 miles north-west of Dublin.

DONEGAL, a county of Ulster, is 68 miles in length, and about 44 in breadth; bounded on the west and north by the ocean, on the east by the counties of Londonderry and Tyrone, and on the south by Fermanagh, and an arm of the sea called the Bay of Donegal. It contains 42 parishes. The county is hilly and boggy, with rich vallies between the mountains, and has several excellent harbours. The linen trade carried on here is pretty extensive. Its capital, Donegal, is situated on a bay of the same name, at the mouth of the river Esk, 9 miles north-north-east of Ballyshannon, and 111 north-west of Dublin.

DOWN, a large, rich, and populous county of Ulster, is about 42 miles in length, and 34 in breadth, containing 38 parishes. It is bounded on the west by Armagh, on the north by Antrim and Belfast Lough, on the south by Carlingford Bay and Louth; its other borders are bounded by the bay of Carrickfergus and the Irish Channel. It is a fertile county, though partly encumbered with bogs. It abounds in bleach-greens, and is full of neat habitations, with an orchard to almost every cottage, affording a cheerful and pleasing prospect of the comfort and opulence of the inhabitants, who are chiefly employed in the linen business. In the rougher parts of the country, they breed a great number of horses, There is a canal from Newry to the South Bann, and so into Lough Neagh. From this lake to Belfast, another Canal has been lately cut, at the expence of the marquis of Belfast; and the river Lagan, which separates Down from Antrim, is also made navigable. Its trade in the linen manufacture is averaged at 151,960l. annually. Its chief town is Downpatrick, a small town, with a linen manufacture, near which are the remains of an old cathedral, remarkable for the tomb of St. Patrick, the founder. It is seated at the S. E. corner of Lough Ccin, on the river Newry, 7 miles W. of Strangford Bay, and 74 N. E. of Dublin.

FERMANAGH, a county of Ulster, is 38 miles in length,

and about 23 in breadth, containing 18 parishes. It is bounded on the west by Leitrim and Donegal, on the north by Donegal and Tyrone, on the east by Tyrone and Monaghan, and on the south by Cavan and Leitrim. It is navigable throughout its whole length, by means of the lakes of Lough Erne; but travelling in it is difficult in many places, by reason of the hilly, rugged, and uneven surface of the country, and the boggy grounds. The linen manufacture, and rearing cattle, form the chief trade of this county. There is only one linen market in it, but the country abounds with spinners and good flax. The sales are averaged at 4100l. annually. Enniskillen, the capital, has a flourishing manufacture of linen, and is pleasantly seated on an island, in a narrow streight between the two parts of Lough Erne, 24 miles south-east of Ballyshannon, and 90 north-west of Dublin. It sends a member to parliament.

DERRY, a county of Ulster, is 32 miles in length, and 30 in breadth; bounded on the west by Donegal, on the north by Lough Foyle and the Ocean, on the east and south-east by Antrim and Lough Neagh, and on the south and south-west by Tyrone. It contains 31 parishes, sends 4 members to parliament, and is a fruitful champaign country. The linen manufacture flourishes in every part of the county, its yearly trade being averaged at 116,720l. Londonderry, the capital, is a modern city, built by a company of London adventurers, in the reign of James I. It consists chiefly of two streets, which cross one another; an exchange is built in the centre: here is a fine market-place, and the harbour is bordered with a quay. It is surrounded with a strong wall, and has 4 castles by the side of the river. It is seated on the river Mourn, near its mouth; over which there is a wooden bridge, upwards of 1000 feet in length, 5 miles south of the Lake or Bay of Lough Foyle, and 136 north-west of Dublin.

MONAGHAN, a county of Ulster, 32 miles in length, and from 10 to 22 in breadth; bounded on the west by Fermanagh, on the north by Tyrone, on the east by Armagh, and on the south-east and south by Louth and Cavan. It contains 21 parishes. The soil is, in general, deep and fertile; but wet and damp in some places, and hilly in others. The linen manufacture flourishes in the north and west parts, and is averaged at 104,000l. annually. Monaghan, the county-town, was fortified with a castle and fort against the Irish, in the reign of Queen Elizabeth. It is 76 miles north-north-west of Dublin.

TYRONE, a county in the province of Ulster, is about 46 miles in its greatest length, and from 18 to 37 in breadth; bounded on the north and north-east by Londonderry, on the east by Armagh and Lough Neagh, on the south and south-west by Fermanagh and Monaghan, and on the west by Donegal. It contains 35 parishes. The soil varies exceedingly;

in some parts it is rich and fertile, in others rough and mountainous, but in general cultivated. Near Dungannon are some collieries. The county-town is Omagh, where the assises are held. The bleach-greens in this county are principally situated in the neighbourhood of Dungannon, Cookstown, and Stewartstown. The linen manufactory is estimated to be 257,444l. yearly. Omagh is situated on the Mourn, 36 miles north-north-west of Dublin.

CLARE, a county in the province of Munster, is 55 miles in length, and 38 in breadth; bounded on the west by the Atlantic, on the north by Galway, and on the east and south by the Shannon, which separates it from Tipperary, Limerick, and Kerry. It contains 2 market-towns, 79 parishes, and breeds more horses than any other county in Ireland, as also a great number of cattle and sheep. The town of Clare was formerly the capital, but now Ennis, 2 miles distant, has usurped its place. Ennis is 22 miles north-west of Limerick, and 118 south-west of Dublin.

CORK, a county of Munster, 80 miles in length, and 50 in breadth, being the largest in the kingdom. It is bounded on the west and south-west by Kerry and the sea, on the north by Limerick, on the east by Waterford and a part of Tipperary, and on the south by the Ocean. It contains 137 parishes. It abounds with excellent harbours, and has many fine rivers, as the Blackwater, Lee, Banon, Ilen, &c. The soil varies; in many parts it is fertile, and the country is pretty populous. Cork, the capital of the county, is the second city in Ireland, for extent, trade, and population. It is a well-built city, and has improved surprisingly of late years, several broad streets having been added, by filling up the canals that ran through them. It is seated on the river Lee, by which t is nearly surrounded, and, by means of the different channels, vessels come up into the different parts of the town. Its principal export is salt provisions. During the slaughtering season, which holds from August to the latter end of January, they kill and cure about 100,000 head of black cattle. Their other exports consist of pork, tallow, raw and tanned hides, butter, candles, calf, lamb, and rabbit skins, wool, linen and woollen yarn, and worsted and linen cloth. The country adjacent to Cork is hilly and beautiful, affording extensive and diversified prospects. It is 14 miles from the sea, about 50 nearly south of Limerick, and 150 south-west of Dublin. Lat. 51. 54. N. lon. 8. 23. W. Cork Harbour, or the Cove of Cork, one of the best in the world, is about 7 miles below the town, and so spacious and deep, as to be capable of containing the largest vessels, and the most extensive fleets. The entrance is easy, and it is secure from currents and storms. One side of the harbour is formed by

Great Island, which is 4 miles long and 2 broad, and very fertile.

KERRY, a county of Munster, is bounded on the west by the Atlantic Ocean, on the north by the river Shannon, on the east by the counties of Limerick and Cork, and on the south by a part of Cork and the Ocean. It is about 57 miles long, and from 18 to 45 broad. It possesses many fine harbours, and the southern district is plain and fertile, but a large part of it is full of mountains, almost inaccessible, so that little corn is produced, and grazing is more attended to. Considerable quantities of beef, butter, hides, and tallow, are exported. It contains 84 parishes. Iron-ore is to be had in most of the southern baronies, and here are several spas, or medicinal springs. The principal rivers are, the Blackwater, Feal, Gale and Brick, Cash-in-Mang, Lea, Flesk, Laune, Carrin, Farthin, Finny, and Roughty. Tralee is the shire-town. Considerable quantities of herrings are taken in the bay, which, however, is so shallow, that vessels of 50 or 60 tons cannot come within a mile of the town. On the north side there is a challybeate spa. It is 144 miles south-west of Dublin. The town of Killarney, which is also in this county, is situated on the side of the lake of the same name, 36 miles west of Cork, 50 south-west of Limerick, and 143 south-west of Dublin. Within half a mile of this place are the ruins of the cathedral of Aghadoe, an ancient bishopric united to Ardfert. The Lake of Killarney, otherwise called Lough Lean, from its being surrounded by high mountains, is truly beautiful. It is properly divided into three parts, called the Lower, Middle, and upper Lakes. The northern, or lower lake, is about 6 miles in length, and from 3 to 4 in breadth. The country on this and the eastern boundary, is here and there diversified with gentle swells, many of which afford beautiful prospects of the lake, the islands, and surrounding scenery. The southern shore is composed of immense mountains, rising abruptly from the water, and covered with woods of the finest timber. From the centre of the lake, the view of this range is astonishingly sublime, presenting to the eye an extent of forest 6 miles in length, and from half a mile to a mile in breadth; hanging as a robe of rich luxuriance on the sides of two mountains, whose bare tops, rising above the whole, form a perfect contrast to the verdure of the lower region. On the side of one of these mountains is O'Sullivan's Cascade, which falls into the lake with a roar that strikes the timid with awe. The view of this sheet of water is uncommonly fine, appearing as if it were descending from an arch of wood, which overhangs it above 70 feet in height from the point of view. Coasting along this shore affords an almost endless entertainment, every cha ge of position presenting a new scene; the rocks hollowed and worn into a variety of forms by the waves, and the trees

and shrubs bursting from the pores of the sapless stone, forced to assume the most uncouth shapes, to adapt themselves to their fantastic situations.—The islands are not so numerous in this as as in the upper lake; but there is one of uncommon beauty, namely, Innisfallen, nearly opposite O'Sullivan's Cascade. It contains 18 Irish acres.—The coast is formed into a variety of bays and promontories, skirted and crowned with arbutus, holly, and other shrubs and trees. The interior parts are diversified with hills and dales, and gentle declivities, on which every tree and shrub appears to advantage: the soil is rich, even to exuberance; and trees of the largest size incline across the vales, forming natural arches with ivy entwining in the branches, and hanging in festoons of foliage. The promontory of Mucruss, which divides the upper from the lower lake, is a perfect land of enchantment; and a road is carried through the centre of it, which unfolds all the interior beauties of the place. Among the distant mountains, Turk appears an object of magnificence; and Mangerton's more lofty, though less interesting summit, soars above the whole. The passage to the upper lake is round the extremity of Mucruss, which confines it on one side, and the approaching mountains on the other. Here is that celebrated rock, called the Eagle's Nest, which produces wonderful echoes. A French-horn sounded here, raises a concert superior to 100 instruments, in some situations; and the report of a single cannon is answered by a succession of peals resembling the loudest thunder, which seems to travel the surrounding scenery, and die away among the distant mountains. The upper lake is about 4 miles in length, and from 2 to 3 in breadth; it is almost surrounded by mountains, from which descend a number of beautiful cascades. The islands in this lake are numerous, and afford an amazing variety of picturesque views. The centre lake, which communicates with the upper, is small in comparison with the other two, and does not shew an equal variety. The shores, however, are, in many places, indented with beautiful bays, surrounded with dark groves of trees, some of which have a very picturesque appearance, when viewed from the water.—The eastern boundary is formed by the base of Mangerton, down the steep sides of which descends a cascade, visible for 150 yards. This fall of water is supplied by a circular lake near the summit of the mountain, called the Devil's Punch-bowl; which, on account of its immense depth, and continual overflow of water, is considered as one of the greatest curiosities in Killarney. One of the best prospects which this admired lake affords, is from a rising ground near the ruined cathedral of Aghadoe. In the several mountains adjacent to the lakes, vestiges of ancient mines of iron, lead, and copper, are still to be seen.

LIMERICK, a county of Munster, is about 48 miles in length,

and 23 in breadth; bounded on the north and north-west by Tipperary and Clare, on the west by Kerry, on the south by Cork, and on the east by Tipperary. It contains 125 parishes, and is a fertile and well-inhabited country, though the south-east and south-west parts are mountainous. The soil is particularly rich in pasture, the best cattle slaughtered at Cork being sent from this county. Several rivers water it, the principal of which are the Shannon and the Maig. Limerick, the capital, is about 3 miles in circumference. Within a century it was reckoned the second city in Ireland: at present it has lost its rank; not because it flourishes less, but because Cork flourishes more. It is divided into the Irish and English Town: the latter, which is the most ancient, is situated on an island, formed by the Shannon, called King's Island. It has been dismantled about 30 years, and has increased prodigiously within that period, by the addition of handsome streets and quays; and its commerce has kept pace with its size. The linen, woollen, and paper manufactures are carried on here to a considerable extent; and the export of beef and other provisions is remarkably great. It contains many hospitals, some handsome public structures, and 5000 houses. The other towns of note are Kilmallock, once much celebrated, but now decayed, and Newcastle. The country around it is fertile and pleasant, but the air is rather moist, from its westerly situation, about 70 miles up the Shannon. It is 46 miles south-south-east of Galway, 50 north of Cork, and 112 south-west of Dublin.

TIPPERARY, a county of Munster, is about 60 miles in length, and from 12 to 40 in breadth; bounded on the north-east and north-west by King's-County and Galway, on the east by Queen's-County and Kilkenny, on the south by Waterford and a part of Limerick, and on the west by Galway, Clare, and Limerick. The south parts are exceedingly fertile, and well furnished with good buildings; but the north, though to no great extent, is inclinable to be barren, and terminates in a row of 12 mountains, the highest in Ireland, and called Phelemdhe Madina. It contains 186 parishes. The river Suir runs through all the length of it, from north to south, besides which, there is a number of smaller rivers and brooks, on which near 50 boulting-mills are counted, a much greater number than is found in any of the other counties. The principal productions are cattle, sheep, butter, and flour. The most considerable places are Clonmel, the county-town; Cashel, an archbishopric; and Carrick, noted for its manufacture of broad cloth and ratteens. Clonmel is a neat and improving place, pleasantly situated on the Suir, on the road from Dublin to Cork, 19 miles south-east of Tipperary, 39 north-east of Cork, and 85 south-west of Dublin. Lawrence Sterne was born at Clonmel.

WATERFORD, a county of Munster, is 46 miles in length,

and from 18 to 25 in breadth; bounded on the south by St. George's Channel, on the west by Cork and a part of Tipperary, on the north by the river Suir, which separates it from Tipperary and Kilkenny, and on the east by Waterford Haven, which parts it from Wexford; contains 74 parishes. Though in general mountainous, with here and there frightful rocks and precipices, it is a fine country, fertile, pleasant and rich. Among the mountains are four considerable loughs and lakes, in which are found trout and char. On the summits of most of them (which are, in some parts, 720 yards above the level of the sea,) are large heaps of stones of great size, supposed to be the ruins of some buildings, but without the intervention of mortar or cement. Waterford, the capital, is a city and sea-port, and a bishop's see, united with Lismore. The streets are narrow, and the air is not very healthy; but it has an excellent harbour, situated extremely well for trade, and ships of great burden may ride at the quay. It stands on the Suir, which is a broad, deep, and rapid river, 5 miles above its junction with the Nore and Barrow. The white glass and other manufactures are in a flourishing state. Upwards of 70 sail of shipping are employed in the Newfoundland trade. For many weeks together, upwards of 3000 hogs are killed weekly; and of butter, there have been exported from 60 to 70,000 casks per annum; besides which, the commerce in beef, corn, linen, &c. with England and other countries, is very considerable. The quay is above half a mile in length, and of a considerable breadth. Packet-boats sail regularly between this port and Milford Haven. It is 8 miles north of St. George's Channel, and 85 south by west of Dublin. Lat. 52. 18. N. lon. 7. 8. W.

GALWAY, a county in the province of Connaught, is about 82 miles long, and 42 broad; bounded on the north by the counties of Mayo and Roscommon, on the east by Roscommon, King's-County, and Tipperary, on the south by Clare and Galway Bay, and on the west by the Atlantic Ocean. It contains 28 churches and 116 parishes. A great part of it is fertile, being a warm limestone soil, which rewards the industry of the husbandman and shepherd; but is very coarse towards the north and west, and, in those parts, rather thinly inhabited. The western coast contains many well-sheltered harbours, and is mostly bordered with green islands and rugged rocks. The town of Galway, the capital, is advantageously situated for foreign trade on Galway Bay, in the Atlantic. The salmon and herring fisheries are carried on here with great spirit, and employ several hundred boats; the quantity of kelp manufactured and exported is considerable, and the increase of the linen manufacture, though of late introduction there, has become important. It is 120 miles west by south of Dublin.

LEITRIM, a county of Connaught, is bounded on the north by Donegal Bay, on the north-east by Fermanagh, on the south-east by Cavan, on the south by Longford, on the south-west by Roscommon, and on the west by Sligo. It is about 42 miles in length, and from 6 to 15 in breadth; is a fertile well-cultivated county; and, though the northern parts (which, however, furnish food for great numbers of young cattle,) are mountainous, yet the southern parts are level. It contains 17 parishes, but has few places of note. Leitrim, the county-town, is pleasantly seated on the river Shannon, 80 miles north-west of Dublin.

MAYO, a county in the province of Connaught, 62 miles in length, and 52 in breadth, contains 68 parishes; and is bounded on the west by the Atlantic Ocean, on the north and north-east by the Ocean and Sligo, on the east and south-east by Roscommon and Galway, and on the south by Galway. The western coast is mountainous, and scarcely inhabited; but in the interior there are good pastures, lakes, and rivers, with several excellent harbours on the coast. Its ancient capital, Mayo, is gone to decay. Ballinrobe is now reckoned the chief-town, but the assizes continue to be held at Castlebar.

ROSCOMMON, a county in Connaught, is about 56 miles in length, and from 9 to 35 in breadth; is bounded on the east by the counties of Leitrim, Longford, and Meath, on the north by Sligo and Leitrim, on the south by Galway, and on the west by part of Galway and Mayo. It is a fruitful county, and, by the help of good husbandry, yields excellent corn. It contains 56 parishes. Here are some extensive bogs, and but few hills. The principal town is Athlone, which has good barracks for both horse and foot soldiers, and is reckoned the central town of Ireland; but the assizes are held at Roscommon, 88 miles west-north-west of Dublin.

SLIGO, a county of Connaught, is about 25 miles in length, and 22 in its greatest breadth; bounded on the west by Mayo, on the north and north-west by the Atlantic; on the east by Leitrim, and on the south-east, south, and south-west by Roscommon and Mayo. It contains 39 parishes. Sligo is the only town of consequence. There are, however, some considerable villages, in which the linen manufacture flourishes. The soil is in some parts good, in others coarse, and towards the coast boggy. Sligo, the county-town, is seated on a river that runs into a bay of the same name, navigable for vessels of 1200 tons up to the quays. It has a considerable trade. It is 26 miles north-north-east of Killala, and 120 north-north-west of Dublin. It sends a member to parliament.

FRANCE is a country of Europe, bounded on the west by the Atlantic Ocean; on the north by the English Channel, the German Ocean, and the Netherlands; on the east by Germany,

Switzerland, and Italy; and on the south by the Mediterranean Sea, and the Pyrenean Mountains. The climate is temperate; the air pure and wholesome; and the soil productive of all the necessaries of life; and, among its luxuries, are the most excellent wines. The principal rivers are, the Loire, the Rhone, the Garonne, and the Seine. There are many others, that give name to the new geographical division of this country into departments. The most considerable mountains, besides the Alps and Pyrenees, are those of Cevennes and Auverne. France was formerly an absolute monarchy, and divided into several military governments or provinces. These varied much from each other in point of extent and importance, and there were others of still inferior consideration. The established religion was the Roman Catholic; and the ecclesiastical division of the country was divided into 18 archbishoprics, and 113 episcopal sees, exclusive of Avignon, Carpentras, Cavaillon, and Vaison, which belonged to the Pope. But in 1789, a very wonderful revolution took place. The deranged state of the finances of the country, occasioned, in a considerable degree, by the American war, had induced Lewis XVI. to convoke, first an assembly of the notables, or principal men in the kingdom; and next (on the ineffectual result of their deliberations) the states general, which had not been assembled since 1614. They consisted of three orders, the nobility, the clergy, and the third estate, or commons. The last were double the number of the other two orders when united; and when the states assembled on the 5th of May, at Versailles, a contest arose, whether the three orders should make three distinct houses, or but one assembly. The third estate insisted upon the latter, and, assuming the title of the National Assembly, declared, that they were competent to proceed to business without the concurrence of the two other orders, if they refused to join them. The nobility and clergy found it expedient to concede the point, and they all met in one hall. In the mean time, Paris was encircled by 50,000 men, with the apparent view of coercing that city, if necessary. Notwithstanding this, on the removal of a popular minister, Mr. Neckar, in July, a dreadful insurrection ensued, on the 14th of that month, in Paris; the military refused to fire upon the people; the Bastile was taken by the citizens; and the governor, and some others, were beheaded, and their heads carried about on poles. On the 17th, the king visited the Hotel de Ville in Paris, and surrendered himself to his people. The national assembly now proceeded to the most extraordinary measures. They abolished nobility and the whole feudal system; confiscated the possessions of the clergy, rendering them dependent on a public allowance, like the servants of the state; and suppressed all the religious houses. The monarchy itself, divested of its formidable prerogatives, became one of the most

limited in Europe. In October, in consequence of a dreadful riot at Versailles, the king, the royal family, and the national assembly, removed to Paris. The king was now in fact a state-prisoner, treated with the formalities appendent to royalty, but watched in all his motions.—From this situation he attempted to escape in June, 1791, with the queen, his sister, the dauphin, and his daughter; but they were arrested at Varennes, and conducted back to Paris. Such, however, was then the moderation of the popular party, that the national assembly admitted the king's apologetical explanation of his conduct, and even declared his person inviolable. This was one of the articles of the new constitution, which they completed soon after, and which was accepted by the king in September, when a new national assembly was elected. Harmony did not long prevail between this assembly and the king. Some of their decrees he refused to sanction; and many of their measures could not fail to give umbrage to a once powerful monarch. In April, 1792, the king, by the advice of his ministers, went to the national assembly, and proposed to declare war against the king of Hungary and Bohemia. War was accordingly declared; but the unfortunate Lewis was suspected of acting in concert with the enemy, and with the emigrant princes who were in arms against their country. In August the mayor of Paris appeared before the national assembly, and demanded the deposition of the king. Before they could deliberate on this demand, a dreadful insurrection ensued: the Thuilleries (the royal residence) was attacked; the Swiss guards were massacred; and the king and royal family took refuge in the national assembly. That body instantly decreed the suspension of royalty, and the convocation of a national convention. The king and his family were conveyed to a house called the Temple, and there kept in close confinement. The convention met on the 21st of September, and instantly decreed the formation of a republic. In December they decreed that the king should be tried before them. The trial accordingly took place; and this tribunal (notwithstanding the constitution had declared his person inviolable) condemned the unfortunate monarch, who was beheaded in the Place de la Revolution, (lately the Place de Louis XV.) on the 21st of Jan. 1793. All Europe exclaimed against the injustice and cruelty of this proceeding. Powers, hitherto neutral, were eager to take part in the war: and the new republic, in addition to the arms of Austria, Prussia, Sardinia, and the empire, had to encounter the combination of Great Britain, Spain, and the United Provinces. The queen did not long survive her consort; being tried and condemned by the revolutionary tribunal, she was executed in the same place, on the 16th of October. Her fate was a prelude to that of the princess Elizabeth, the king's sister, who was also beheaded in the same place on the 10th of May, 1794.

The dauphin and his sister remained in confinement, where the former became diseased with swellings, which brought on a fever, and he died on the 8th of June, 1795; the princess was taken the December following to a place near Basil, on the confines of Germany, where she was exchanged for some French deputies, who had been some time prisoners to the emperor, and she arrived at Vienna on the 9th of Jan. 1796. Referring to professed histories of the revolution for a more copious narration, it may suffice to observe here, that various factions successively seized the helm of government, and, in their turn, were overthrown; the prisons were crowded in every part of the republic; the scaffolds streamed almost incessantly with blood; and many of the most popular patriots, and of those, moreover, who had voted for the death of the king, perished on the scaffold, or in exile and misery; while insurrections, proscriptions, and massacres, became in a manner only common occurrences. By the conclusion, however, of the year 1794, this reign of despotism and terror gave place to a more moderate system; and although at one period the shutting up of the churches, the indecent spectacle of priests appearing in the convention to resign their functions and renounce their religion, and the formation of a new calendar, (by which the year was divided into decades instead of weeks,) indicated open hostility to the Christian religion; the convention found it necessary at last to conform so far to the prejudices of the people as to declare publicly their acknowledgment of a Supreme Being, and of the immortality of the soul, and to permit again the exercise of religious worship; abolishing however all clerical distinctions, and leaving the whole maintenance of the ministers of religion to the benevolence of the people. With respect to the war, it may be sufficient to state, in general, that the formidable coalition of continental powers was, however, dissolved by the mighty efforts of France, after suffering the severest reverse, and having their countries overrun by the republican armies; by which France acquired a vast accession to her territory and population, which before had been reckoned at not less than 25 millions. Two forms of government were adopted by the French after the death of the king in 1793, the latter of which had for its outline the executive power entrusted to a directory of five persons, and the legislative to a council of ancients and a council of five hundred. But on the 9th of November, 1799, this constitution was overturned by general Bonaparte (in concert with a few others of the principal men) who placed himself at the head of affairs, with the title of first consul, having two other consuls associated with him in the government. The legislative councils were also very much abridged in their numbers, and had the names of the conservative senate, the legislative body, and the tribunate. Soon after this change wa

effected, the Roman Catholic religion was re-established in France, though, it must be confessed, on more moderate and liberal principles than it was before. However, on the 20th May, 1804, the consular government was set aside, and Bonaparte was proclaimed Emperor of the Gauls, and, on the 2d of December, crowned by the pope at Paris with great pomp, and this power made hereditary in his family. To this title was afterwards added that of King of Italy, and Protector of the Confederation of the Rhine, &c. Thus an end was put to republicanism by its greatest champion; and France, after the most wonderful efforts, found herself under a monarchy as absolute in effect as that which the revolution overturned. Bonaparte, after conquering the emperor of Germany at Austerlitz, the king of Prussia at Zena, and the emperor of Russia at Friedland, appeared to be making the most rapid strides towards universal empire. At length the French armies met with a reverse of fortune. Their defeats at the Pyrenees, at Torbes, and at Toulouse, under lord Wellington, were followed by the fatal campaigns in Russia and Germany; and in 1814 the armies of Russia, Austria, and Prussia, headed by their sovereigns, entered France, when after various retreats, and advances, they reached Paris in triumph. Then followed the abdication of Napoleon, and the restoration of the Bourbons. Napoleon was sent to Elba; but in 1815 he found means to escape, and landing in France, and the army espousing his cause, he reached Paris on the 20th of March, without firing a shot, and immediately resumed the reins of government, the Bourbons having fled. The allies combined against this new usurpation, and on June 18 of the same year, the French forces under Napoleon were completely defeated at Waterloo. Bonaparte fled to Paris, declared his political life at an end, and withdrew into privacy. On the 8th of July Louis re-entered his capital, followed by the sovereigns of Russia, Austria, and Prussia, and their armies. Napoleon reached Rochefort, where, finding no means of escape, he surrendered to a British ship of war, which sailed immediately for England, and anchored in Torbay; he remained on board till another ship was prepared to take him to St. Helena, the destined place of his exile. He died there, May 5, 1821. The frontiers of France are now nearly as they were before the revolution.

RUSSIA, a large empire, partly in Asia, and partly in Europe; bounded on the north by the Frozen Ocean; on the south by Great Tartary, the Caspian Sea, and Persia; on the east by the sea of Japan; and on the west by Sweden, Poland, and the Black Sea. There were three countries that had the name of Russia; namely, Red Russia; White Russia, which comprehends Lithuania, and Black Russia, which comprehends the governments of Kaluga, Moscow, Tula, Rezan, Volodimar, and

Yaroslav; and hence his imperial majesty takes the title of Emperor of all the Russias. The empire, exclusive of the late acquisitions from the Turks and from Poland, forms a square, whose sides are 2000 miles each. The seas of Russia are, the Baltic, the White Sea, the Frozen Ocean, the Black Sea, and the Caspian Sea; there are also five large rivers, namely, the Dnieper, Volga, Don, Dwina, and Oby. A country of such vast extent must lie in different climates, and the soil and products must be as different. The most fertile part is near the frontiers of Poland; insomuch that the inhabitants are able to supply their neighbours with corn; the north part is not only more cold, but very marshy, and overrun with forests inhabited chiefly by wild beasts. Besides domestic animals, there are wild beeves, reindeer, martens, white and black foxes, weasels, ermines, and sables, whose skins make the best furs in the world. Those that hunt these creatures for their skins, use no fire-arms for fear of spoiling them. They had very few vines before Peter the Great caused them to be planted in different places. Here are large quantities of cotton and silk (with which they make all sorts of stuffs,) skins, furs, Russian leather, talc, tallow, hemp, Russian cloth, honey, wax, and almost all the merchandise of China, India, Persia, Turkey, and some European countries. This vast empire was divided by the empress Catherine into 41 governments; namely, Petersburgh, Olonets, Wiburg, Revel, Riga, Pskof or Pleskof, Novogorod, Twer, Smolensko, Polotsk, Mohilef, Orel, Kaluga, Moscow, Tula, Rezan, Volodimir, Yaroslav, Vologda, Archangel, Kostroma, Nishnei-Novogorod, Kasan, Simbrisk, Penza, Tambof, Voronetz, Kurk, Novogorod, Severskoi, Tchernigog, Kiof, Kharkof, Catherineslaf, Caucasus, Saratof, Usa, Viatka, Perm, Tobolsk, Kolyvan, and Irkutz. The inhabitants, in general, are robust, well-shaped, and of a pretty good complexion. They are great eaters, and very fond of brandy; they use bathing, but smoke no tobacco, lest the smoke should dishonour the images of the saints, which the have in great veneration: however, they take a great deal of snuff, made of the tobacco brought from the Ukraine. They were formerly the most ignorant, brutish people in the world, and many of them are now little better. Formerly no Russians were seen in other countries, and they seldom or never sent ambassadors to foreign courts: but now the gentlemen are more polite, and study the interests of different nations. Their armies are always very numerous. They had no men of war, nor merchant-ships, before the reign of Peter the Great; but in the reign of the empress Catherine, powerful Russian squadrons appeared, not only in the Baltic, but in the Black Sea, and in the Mediterranean. They have images in their churches; and the priests give a passport to those that

are dying, addressed to St. Nicholas, who is desired to entreat St. Peter to open the gates of heaven, as they have certified that the bearer is a good Christian. The church is governed by a patriarch, under whom are the archbishops and bishops. Every priest is called a *papa* or pope, and of these here were 4000 in Moscow only. Formerly he was thought a learned man who could read and write; but Peter the Great undertook to introduce the arts and sciences; and, in 1724, the first university was founded that ever was in Russia; and here is also an academy of sciences at Petersburgh, supplied with some of the best professors in Europe.—With respect to dress, a long beard is in high estimation among the fair nymphs of Russia. The commonality have still a greater veneration for this fringe of human hair, notwithstanding the efforts of their monarchs to root it out; and it is only those depending upon government, in the army and navy, who have yet complied with the custom and the wish of the court. Those who retain their beards, retain likewise the ancient dress; the long swaddling coat of skins, or cloth lined with skins, in winter; and in summer, of cloth only. About their middle they have a sash of any colour; but what they prefer is green or yellow. They wear trowsers instead of breeches and stockings; their limbs are, besides, wrapped in many folds of woollen stuffs, to keep them warm, and above all they wear boots. Their shirts are fashioned as women's; their necks exposed to the cold, which are hard and impenetrable from this practice. Government continue to exert every nerve to compel the subjects to adopt the German dress, the clergy alone excepted. None can procure any place, any favour from court, upon other condition than banishing the Asiatic sheep-skin robes. The worn-out veteran retires with a pension, upon the express terms of never again assuming the habit of his fathers. But so zealously attached are the multitude to former manners, and so honourable do they esteem them, that a Russian, dressed in his beard and gown, tells you by his looks that he has not prostituted the memory of his ancestors. The dress of the women is the reverse of the men, both in fashion and colour; every part of it being as short and tight as decency will allow, and very gaudy. It is exactly the same with that of the Highland women in Scotland; both have the short jacket, the striped petticoat, and the tartan plaid; and both too in general have a napkin rolled about their head. The Russian women are, however, far more elegant and rich in their attire; nor is gold lace wanting to set off their charms, any more than the art of painting. The young generation are modernizing these antique vestments; the stiff embroidered napkin is supplanted by one of flowing silk; the jacket and petticoat are of muslin, or fine

stuffs; and the plaid is exchanged for a silk or sattin cloak, in the cold season lined with fur. The better class of females wear velvet boots; the dress of the higher ranks is after the French and English fashion; and all must have a covering of fur six months of the year. Thus equipped, the prince and the peasant are hurled in their chaises and sledges, through the dreary Scythian winter. The sovereign of Russia is absolute. He was formerly called grand duke, which is now the title of the heir apparent; he afterwards assumed the title of czar, and, in the sequel, that of emperor. The natives pronounce the word czar like *tzar*, or *zaar*, and this by corruption from Cæsar, emperor, from some fancied relation to the Roman emperors; on account of which they also bear the eagle as a symbol of their empire. The first who bore the title of czar, was Basil, son of Basilides, who freed his country from its subjection to the Tartars, about the year 1740. Perhaps no country ever exhibited, in so short a time, the wonders that may be effected by the genius and exertions of one man. Peter the Great, at his accession to the throne, found his subjects of all ranks involved in the grossest ignorance and barbarism; his numerous armies ferocious and undisciplined; and he had neither merchant-ships nor men of war; which, added to the remoteness of its situation, rendered the influence of Russia in the politics of Europe of little consideration. Peter civilized his barbarous subjects, disciplined his armies, built cities and fortresses, and created a navy. These national improvements have been continued since his time, and Russia now holds a rank among the nations of Europe, of which human foresight, at the commencement of the last century, could have formed no conception. The chief cities are Petersburgh, the capital of the empire, situated on an island in the river Neiva, between the gulph of Finland and the lake Ladoga; Cronstadt, on a small island called Retusari in the gulph of Finland, noted for containing the imperial academy, dock-yards, naval stores, &c. Moscow, the principal city of the province of that name; Archangel, on the White Sea; Wyburg, Narva, Fredericksham and Revel, on the gulph of Finland; Perneau and Riga, on the gulph of Livonia, or gulph of Riga; Caffa, or Theodosia, Ockzakow, Kherson, Kinburn, Precop, and Sebastopolis, on the Black Sea.

GERMANY lies between 45 and 55 degrees north latitude, and between 5 and 19 degrees east longitude, being 690 miles in length, and 520 in breadth. It is bounded by Denmark and the Baltic, on the north; by Poland and Hungary, including Bohemia, Silesia, and Moravia, on the east; by Switzerland, Italy, and the gulph of Venice, on the south; and by France, Holland, and a small part of the British Sea, on the west. It contains a great many princes, secular and ecclesiastic, who are

independent of each other; and there are a great number of free imperial cities, which are so many little republics, governed by their own laws, and united by a head, who has the title of emperor. The western Roman empire, which had terminated in the year 475, in the person of Augustulas, the last Roman emperor, and which was succeeded by the reign of the Huns, the Ostrogoths, and the Lombards, was revived by Charlemagne, king of France, on Christmas-day, in the year 800. This prince being then at Rome, pope Leo III. crowned him emperor, in St. Peter's church, amid the acclamations of the clergy and the people. Nicephorus, who was at that time emperor of the east, consented to this coronation. After the death of Charlemagne, and of Lewis le Debonnaire, his son and successor, the empire was divided between the four sons of the latter. Lotharia, the first, was emperor; Pepin was king of Aquitaine; Lewis, king of Germany; and Charles le Cheuve, king of France. This partition was the source of incessant feuds. The French kept the empire under eight emperors, until the year 912, when Lewis III. the last prince of the line of Charlemagne, died without any issue male. Conrad, count of Franconia, the son-in-law of Lewis, was then elected emperor. Thus the empire went to the Germans, and became elective; for it had been hereditary under the French emperors. The emperor was chosen by the princes, the lords, and the deputies of cities, till towards the end of the 13th century, when the number of the electors was fixed. Rodolphus, count of Hapsburgh, was elected emperor in 1273. He was the head of the house of Austria, which is descended from the same stock as the house of Lorrain, reunited to it in the person of Francis I. father of the two late emperors, Joseph and Leopold. On the death of Charles VI. of Austria, in 1740, an emperor was chosen from the house of Bavaria, by the name of Charles VII. On the death of this prince, in 1745, the above-mentioned Francis, grand duke of Tuscany, was elected emperor. At the close of the Saxon race, in 1204, the prerogatives of the emperor were very considerable; but, in 1447, they were reduced to the right of conferring all dignities and titles, except the privilege of being a state of the empire; of appointing once, during their reign, a dignitary in each chapter, or religious house; of granting dispensations with respect to the age of majority; of erecting cities, and conferring the privileges of coining money; of calling the meetings of the diet, and presiding in them. Vienna, the capital of Germany, stands in a fertile plain, on the right bank of the Danube, at the influx of the rivulet, Vien. The city is not of great extent, nor can it be enlarged, being limited by strong fortifications, but it is populous, and contains 78,000 inhabitants. The streets in general are narrow, and the houses high; but there are several

fine squares, and in that called Joseph Square, is a colossal equestrian statue in bronze of Joseph II. The chief public buildings are the imperial palace, the palaces of the princes, the imperial chancery, the imperial arsenal, the city arsenal, the mint, the general hospital, the town-house, the custom-house, the bank, the library, and the museum. The present government of Germany, as settled at the congress of Vienna in 1815, is by a perpetual confederation, bearing the name of the Germanic Confederation; the object of which is the maintenance of the external and internal security of Germany, the independence and inviolability of the Confederated Estates. Its affairs are confided to a Federative Diet, consisting of 17 individual and collective estates, namely, Austria; Prussia; Bavaria; Saxony; Hanover; Wirtemburg; Baden; Electoral Hesse; Grand Duchy of Hesse; Denmark, for Holstein; Netherlands, for Luxemburg; Grand Ducal and Ducal, Houses of Saxony; Brunswick and Nassau; Mecklenburg, Schwerin and Strelitz; Holstein Oldenburg, Anhalt, and Schwartsburg; Hohenzollern, Lichtenstein, Reuss, Schaumburg Lippe, Lippe, and Waldeck; and the free towns of Lubec, Frankfort, Bremen, and Hamburg. The majority of these 17 votes in the diet is the rule. But when fundamental laws are to be enacted, or changes made in them, the diet forms itself into a general assembly, and then the votes are 68, calculated according to the respective extents of the individual estates. In this assembly two-thirds or 46 votes are necessary. The diet sits at Frankfort on the Maine, and Austria has the presidency. The language of Germany is a dialect of the Teutonic, which succeeded that called the Celtic The three principal religions are, the Roman Catholic, the Lutheran, and the Calvinists; but Christians of all denominations are tolerated, and there are a multitude of Jews in all the great towns.

PRUSSIA, a large country of Europe, bounded on the north by the Baltic and Samogitia, on the east by Lithuania, on the south by Poland, and on the west by Pomerania; about 180 miles in length, and near 100 in breadth, where broadest. It is a very fertile country, producing a great deal of flax, hemp, and corn; and the sea, rivers, and lakes, supply them with great plenty of fish. Prussia also abounds with flocks and herds, and fine horses. Its chief commodities are wool, honey, wax, pitch, pit-coal, nops, and buck-wheat. Here is plenty of game, as white and common hares, elks, deer, roe-bucks, and wild-boars; but the forests are at the same time infested with lynxes, wolves, foxes, bears, wild asses, and uri, a species of buffalo. The hides of these last, which are extremely thick and strong, are sold to foreigners at a great price. Here is

neither salt, wine, nor minerals, but yellow amber (for the sake of procuring which the Romans penetrated into and subdued this country) is found in great quantities on the Samland shore. There are several large lakes, besides the rivers Vistula, Pregel, Memel, &c. About four months of the year are temperate, warm, and pleasant; but the autumns are often wet, and the air in winter is cold, piercing, and severe. The manufactures in glass, linen, cloth, metals, &c. are rapidly increasing. The inhabitants are a mixture of native Prussians, (who appear to be genuine Germans,) Lithuanians, and Poles. The Teutonic order had sovereignty in Prussia about 300 years; after which Prussia was added to the dominion of the electoral house of Brandenburg, and in 1704 it was raised to a kingdom, by the elector Frederick, who, with his own hands, put the crown on his head, and on that of his consort, at Koningsberg. Prussia is divided into three parts, Samland, Natangen, and Oberland. Koningsberg is the capital. The power of Prussia was much abridged by the late war, its armies were destroyed, and the king driven from his capital, by the French: his territories have, however, been restored, with some important additions.

POLAND, a large country of Europe, bounded on the west by Pomerania, Silesia, and Moravia, on the south by Hungary and Moldavia, on the north by Prussia, Courland, and Russia, and on the east by Russia. Poland, in its utmost latitude, included 13 provinces, viz. Great Poland, containing the palatinates of Posnania, Kalish, Siradia, Leuczicz, and Rawa; Cujavia, containing the palatinates of Breskic and Wladislaw; Massovia, containing the palatinates of Cracow, Sandomir, and Lublin; Podlachia, or the palatinate of Bielsk; Little, or Red Russia, containing the palatinates of Chelm, Belez, and Lemburg; Podolia, and Kiof, containing the palatinates of Podolia and Bracklaw; the palatinate of Kiob; and Volhinia. Besides these, Lithuania has been considered as a part of Poland; as likewise Samogitia, and even Courland. The late government was monarchical and aristocratical; all the acts of state being in the name of *the king and republic of Poland.* The king was the only elective sovereign in Europe; he was chosen by a general diet, and had a settled revenue of 140,000l. a year; but could not, by his own authority, raise any new taxes, or change any law.—The aristocracy consisted in the senate and general diet. The senate was composed of the bishops, great officers, palatines, and governors of towns, who, with the king, regulated the affairs of the kingdom, so as to prevent him from doing any thing against the liberty of the country. The general diets, which are assemblies of all the nobility, met every two years; or oftener, when there was any important affair on the carpet. The Poles, or

Polanders, are large and robust. The peasants were poor, miserable, clownish, and mere slaves to the noblesse. The Polish towns are mostly built of wood, and the villages consist of mean huts. The nobles have from time immemorial resided in their seats or castles, in their own villages, maintaining themselves by agriculture, breeding of bees, grazing, and hunting. Such was the state and constitution of Poland, before the memorable year 1772, when a partition of the country, projected by the king of Prussia, was effected by that monarch, in conjunction with the empress of Russia, and Maria Theresa, empress of Germany. By this partition, Great Poland, Polish Prussia, (the cities of Dantzic and Thorn excepted,) and part of Lithuania, were annexed to Prussia; Little Poland and Red Russia, to Austria; and the remaining, and greater part of Lithuania, Courland, Polesia, Podolia, Volhinia, and the palatinate of Kiof, were seized by Russia, so that only Samogitia, Massovia, and Podlachia, were left to constitute the kingdom of Poland. Of these dismembered countries the Russian part is the largest, the Austrian the most populous, and the Prussian the most commercial. The population of the whole amounts to near 5,000,000; the first containing 1,500,000, the second 2,500,000, and the third 860,000. The three partitioning powers, moreover, forcibly effected a great change in the constitution. By this the house of Saxony, and all foreign princes, who might be likely to give weight to Poland by their hereditary dominions, were rendered incapable of filling the throne; the faintest prospect of an hereditary sovereignty was removed; the exorbitant privileges of the equestrian order were confirmed in their utmost latitude; and the prerogatives of the crown still further diminished. In 1791, the king and the nation, in concurrence, almost unanimously, and without any foreign intervention, established another constitution. By this the broils of an elective monarchy, by which Poland, on almost every vacancy of the throne, had been involved in the calamities of war, were avoided, the throne being declared hereditary, in the house of Saxony. The rights and privileges of all orders in the republic, (the king, the nobles, the citizens, and the peasants,) were alike equitably consulted. In a word, it was not, on the one hand, the haughty despot dictating a constitution to his people, nor, on the other, a proud aristocracy, or a mad democracy, that wrested from their sovereign his just prerogatives; but it was the universal wish of the nation, the sentiment that inspired which was universal happiness. A few of the nobility, however, discontented at the sacrifice of some of their privileges, repaired to the court of Russia; and their representations concurring with the ambitious views of the empress, she sent an army into Poland, under pretence of being guarantee of the constitution of 1772. Her interference was

too powerful to be resisted, and this new constitution was overthrown. But the principal object for which the Russian army entered Poland was not yet attained. The empress had planned, in conjunction with the king of Prussia, a second partition of this unhappy country, which actually took place in 1793. By this the empress obtained nearly the remaining part of Lithuania, with the palatinates of Podolio, Kiof, and Bratzlaw; beside the voiwodships, or provinces, of Posen, Gnesen, Kalish, Siradia, Wielun, Lentschitz, Cujavia, Doorzyn, Rawa, part of Plotsk, &c. with the city and monastery of Czentstokow, (the Loretto of Poland,) and its rich treasures; the king of Prussia obtained the great object of his wishes, the cities of Dantzic and Thorn. Some attempts were made by a few patriotic noblemen, to deliver their country from its oppressors, and they were at first successful; but the brave Kosciusko being taken prisoner, and his army defeated, no farther efforts were made. Kosciusko was carried into Russia, and the king formally resigned his crown at Grodno, in 1795. After that, the country underwent a farther partition, till it was entirely swallowed up by the rapacity of the dividers of the spoil. In 1806 the French obtained possession of the Prussian part, and by the treaty of Tilsit it was given to Saxony, to be held under the title of the duchy of Warsaw. In 1815 it was united to the empire of Russia, with the exception of the duchy of Posen, restored to Prussia. The emperor of Russia has framed for it a new constitution, in which he has granted legislative powers, and the privilege of self-taxation, to a senate and a body of representatives. The universities of Poland are, Cracow, Wilna, and Posen. The air is cold, and they have but little wood; however, it yields such plenty of grain, that near 4000 vessels and floats, most of which are laden with corn, annually pass down the Vistula to Dantzic: 80 or 90,000 oxen are also driven every year out of Poland. They also export large quantities of leather, furs, hemp, flax, linseed, hops, saltpetre, honey, wax, tallow, hides, ship and house timber, pitch, potash, horned-cattle, horses, and other commodities; but these are greatly over-balanced by the imports, namely, wine, spices, cloths, silk stuffs, fine linen, plate-copper, brass, steel, furs, &c. they have also mines of salt, of great depth, out of which they dig rock salt. The principal rivers are the Dnieper, the Vistula, the Bug, the Dniemen, the Dniester, and the Bog. Warsaw is the capital.

SPAIN is bounded on the north by the Bay of Biscay; on the north-east by the Pyrenees, which separate it from France; on the east, south-east, and south, by the Mediterranean; on the south-west by the Atlantic; and on the west by Portugal and the Atlantic. It is 700 miles long, and 500 broad; and contains the provinces of Old and New Castile, Andalusia, Arra-

gon, Estramadura, Galicia, Leon, Catalonia, Granada, Valencia, Biscay, the Asturias, Murcia, and Upper Navarre, some of which have been separate kingdoms. The air is dry and serene, except during the equinoctial rains, but excessively hot, in the southern provinces, in June, July, and August. The vast mountains, however, that run through Spain, are beneficial to the inhabitants, by the refreshing breezes that come from them in the southern part; though those in the north and north-east are in the winter very cold. The soil is very fertile; but there are large tracts of uncultivated ground. The produce of the country is wheat, barley, saffron, honey, silk, saltpetre, hemp, barillas, and even sugar-canes, with the richest and most delicious fruits that are to be found in France and Italy; and its wines are in high esteem. Wolves are the chief beasts of prey that infest Spain. The wild bulls have so much ferosity, that bull-fights were the most magnificent spectacles which the court of Spain could exhibit. The domestic animals are horses, which are remarkably swift, mules, black cattle, and sheep, the wool of which is superior to any in Europe. Spain abounds in minerals and metals; cornelian, agate, jacinth, loadstones, turcois-stones, quicksilver, copper, lead, sulphur, alum, calamine, crystal, marbles of several kinds, porphyry, the finest jasper, and even diamonds, emeralds, and amethysts, are found here. Anciently it was celebrated for gold and silver mines; but since the discovery of America at least, no attention has been paid to them. The principal rivers are the Douero, Tajo, Guadiana, Guadalquiver, and Ebro. Spain, formerly the most populous kingdom in Europe, is now very thinly inhabited; to which various causes have contributed, as the expulsion of the Moors, the emigrations to the colonies, the vast numbers and celibacy of the clergy, and the indolence of the natives. The persons of the Spaniards in general are tall; their complexions swarthy; their countenances expressive. The beauty of the ladies reigns chiefly in their novels and romances; in their persons they are small and slender. Jealousy is no longer the characteristic of a Spanish husband; the married ladies have here their cortejo, or male attendant, in the same manner as the Italians have their cicisbeos. The established religion is the Roman Catholic; and here the inquisition once reigned in all its horrors. There are 8 archbishoprics, 44 episcopal sees, and 24 universities. Spain, once the most free, is now one of the most despotic monarchies in Europe. They had once their cortes, or parliaments, which nad great privileges; but, though not absolutely abolished, they have no part in the government. They are assembled indeed, occasionally, (as at the accession of the monarch,) but merely as an appendage to the royal state, without power, or any other consequence than what results from their indi-

vidual rank. Madrid is the capital.—For the events which have attended the late Revolutions in Spain, by which the government is entirely changed, the Reader is referred to the article CHRONOLOGY.

TURKEY, (in Europe) is bounded on the north by Russia, Poland, and Sclavonia; on the east by the Black Sea, the sea of Marmora, and the Archipelago; on the south by the Mediterranean; and on the west by that sea, and the Venetian and Austrian territories. It contains Bessarabia, Moldavia, Wallachia, Bulgaria, Servia, Bosnia, Romania, Macedonia, Janna, Livadia, Albania, part of Croatia and Dalmatia, and the Morea. These countries lie between 17 and 40 degrees east longitude, and 36 and 49 degrees north latitude, extending 1000 miles in length and 800 in breadth; and contains the countries of Irac-Arabia, Diarbec, Curdistan, Armenia, part of Circassia, Natolia, and Syria, with Palestine, or the Holy Land, so called from its having been the scene of the birth, ministry, and death, of Jesus Christ. In general, the Turks are very moderate in eating, lovers of rest and idleness, and consequently not very fit to undergo fatigues. Polygamy is allowed among them; but their wives, properly so called, are no more than four in number.—They are charitable towards strangers, let their religion be what it will, and no nation suffers adversity with greater patience than they. The grand seignior is absolute master of the goods and lives of his subjects, insomuch that they are little better than slaves. The grand vizier is the chief next the emperor; but it is a dangerous place, for he often deposes them, and takes off their heads at his pleasure; but though the grand seignior has such prodigious power, he seldom extends it to persons in private life, for these may remain as quiet as in any other part of the world. The bashaws, governors, and officers of state, are, in general, the children of Christian parents, who are commonly taken in war, or purchased. The Turks have always very numerous armies on foot, the chief of which are the janizaries, who have been bred in the seraglio, and have used military discipline from their infancy. Of these they have always 25,000, and there may be about 100,000 who have that name. The navy is laid up at Constantinople, near the arsenal, and consists of about 40 men of war, exclusive of auxiliary and hired ships, and gallies of 2, 3, and 4 benches of oars. The Turks believe in one God, and that his great prophet is Mahomet. Constantinople is the capital.

HOLLAND, or Dutch Netherlands, a country of Europe, consisting of seven provinces, and extending from north to south not more than 150 miles, and 100 in breadth from east to west. They are bounded on the west and north by the Ger-

man Ocean, and on the south and east by Brabant and Germany. These provinces rank in the following order, 1. Guelderland subdivided into the districts of Nimeguen, Zutphen, and Arnheim; 2. Holland, subdivided into N. Holland, S. Holland, and W. Friesland; 3. Zealand, subdivided into the part near the E. Scheldt, and the part near the W. Scheldt; 4. Utrecht; 5. Friesland; 6. Overyssel; and 7. Groningen. Besides these provinces, are the lands of the generality, (including Dutch Brabant, Flanders, and Limburg,) in which are the towns of Bois-le-duc, Breda, Bergen-op-Zoom, Maestricht Venlo, Sluys, Hulst, &c. This republic (which is likewise called by the general name of Holland) affords a striking proof, that unwearied and persevering industry is capable of conquering almost every disadvantage of climate and situation. The air and water in this country are nearly equally bad; the soil produces naturally scarce any thing but turf; and the possession of this very soil is disputed by the ocean, which, rising considerably above the level of the land, is prevented from overflowing it only by strong and expensive dykes. Yet the labours of the patient Dutchman have rendered this small and seemingly insignificant territory one of the richest spots in Europe, with respect to population and property. In other countries possessed of a variety of natural productions, it is not surprising to find manufacturers employed in augmenting the riches of the soil; but to see, in a country like Holland, large woollen mauufactures, where there are scarce any flocks; numberless artists employed in metals, where there is not a mine; thousands of saw-mills where there is scarce a forest; an immense quantity of corn, exported from a country where there is not agriculture sufficient to support one half of its inhabitants; is what must strike every attentive observer with admiration. Among the most valuable natural productions of the United Netherlands, may be reckoned their excellent cattle; and large quantities of madder are exported, chiefly cultivated in Zealand. The most considerable revenue arises from the fisheries; but these are not so considerable as formerly. The number of vessels employed in the herring-fishery, in particular, is reduced from upwards of 2000 to less than 200; and yet it afterwards maintained no less than 20,000 people. About 100 vessels are employed in the Greenland fishery, and 140 in the cod-fishery near the Dogger-Bank, and near the coast of Holland. The Dutch were formerly in possession of the coasting trade and freight of almost all other trading nations. They were also the bankers for all Europe.—But these advantages did not continue to be so lucrative, when the other European nations began to open their eyes so far as to employ their own shipping in their trade, and to establish banks of their own. Notwithstanding these deductions, the Dutch trade remained considerable; in consequence of their

vast opulence, they still influenced the exchange for Europe, and their country was, as it were, the general warehouse of the commodities of every quarter of the globe. Among the monopolies of their East India company, the spice trade has long been the most valuable: it comprehends the articles of cloves, mace, nutmeg, and cinnamon. The Java coffee is the best next to that of Mocha; and other great branches of this trade are, rice, cotton, pepper, &c. articles of great importance, but not in the exclusive possession of the Dutch. Their West India company traded not only to the West Indies, but to the coast of Guinea for slaves; and distinct from this, they have two companies which trade to Surinam and Berbice. The foreign possessions of the Dutch, previously to the commencement of the present war, (1809,) were, in Asia, the coasts of the island of Java, the capital of which is Batavia, the seat of the governor-general of all their East India settlements; some settlements on the coast of Sumatra, Malabar, and Coromandel; the greatest part of the Moluccas or Spice Islands; settlements, or factories, in the island of Celebes, at Surat and Petra, and in the Gulph of Persia. In Africa, the Cape of Good Hope, with George-de-la-Mina, and other fortresses and factories in Guinea. In the West Indies, the islands of St. Eustatia, Saba, and Curaçoa; and in South America, the colonies of Issequibo, Demerara, Surinam, and Berbice, in the country of Guiana. In Holland, the inland trade is greatly facilitated by the numerous canals, which cross the country in every direction. The number of manufactures established in the United Provinces is astonishing. Saardam, a village in North Holland, contains, for instance, about 900 windmills, partly corn-mills, partly saw and paper-mills, and mills for the making of white lead, &c. But the Dutch trade is now no longer in its ancient flourishing state; to which, even if the frugality and industry of the nation had not been diminished by too great riches, the rivalship of other nations, and the commercial knowledge of the age, would never permit it to rise again. All sects, as before mentioned, are tolerated in Holland; but formerly none but Calvinists could hold employments of trust or profit. Since the great confederation of Utrecht, in 1579, the Seven United Provinces have been considered as one political body, united for the preservation of the whole. In 1581, the Hague was appointed the place of meeting for the States General, an assembly invested with the supreme power of the confederation, and composed of deputies chosen out of the provincial states. This power related to the making war and peace, levying taxes, &c. in their joint capacity; but as to internal government, each province was independent not only of the other provinces, but even of the supreme power of the republic.—In the disputes on the French revolution, the Dutch, at first, appeared hostile to the new republic, but never heartily

co-operated with the allies. The stadtholder was probably influenced by the courts of Prussia and England, but a party more powerful than his own were his enemies; and, on the invasion of Holland by the French, in the beginning of 1795, he thought proper, with his family, to take refuge in England. Since then, their form of government was thrice modelled upon that of France; first, upon the principles of democracy; then in a monarchial form, having the executive authority vested in a single person, with the title of grand pensionary; and afterwards the regal dignity was conferred on Louis Bonaparte. In the spring of 1810, the province of Zealand, Dutch Brabant, and part of Guelderland, were wrested from this new kingdom, and added to the French empire. In 1813 a counter-revolution took place, and the prince of Orange was proclaimed Sovereign Prince of the Netherlands.

DENMARK is bounded on the east by the Baltic Sea, on the west and north by the ocean, and on the south by Germany. The country is generally flat, and the soil sandy. The air is rendered foggy by the neighbourhood of the seas and lakes, of which it is full, but has no considerable river. Denmark, properly so called, consists of Jutland and the islands of Zealand and Funen, with the little isles about them; but the king of Denmark's dominions contain the kingdom of Norway, the duchies of Holstein, Oldenburg, and Delmonhorst. The winter continues seven or eight months; and in the summer the heat is very considerable, and the days are long. The commodities are corn, pulse, but chiefly horses, and large beeves. Denmark was formerly elective, but since 1660 it was rendered hereditary, even to the daughters, partly by consent, and partly by force; at which time the nobility lost most of their privileges. They have very few laws, and those are so plain, that they have little need of lawyers, for causes are soon tried. They allow but one apothecary in a town, except at Copenhagen, where there are two. Their shops are visited by the physicians once a week, and all the perished drugs are destroyed. The inhabitants are Protestants since the year 1522, when they embraced the confession of Augsburg. The forces which the king of Denmark has usually on foot are near 40,000 but most of them are in the pay of other princes. The revenues are computed at 1,400,000l. a year, which arise from the crown lands, tolls, and duties. The produce of Denmark consists in pitch, tar, fish, oil, and deal-boards. Copenhagen is the capital.

SWEDEN, a large kingdom in the north part of Europe; bounded on the north by Danish Lapland, and the ocean; on the south by the Baltic sea, and the Gulf of Finland; and on the west by Norway, the Sound, and the Cattegat; being about 800 miles in length, from north to south, and 350 in breadth,

from east to west. It is divided into Sweden Proper, Gothland, Nordland, Finland, and Lapland. It was anciently called Scandinavia, or at least it is part of the country of that name. We may easily conceive that the climate is not every where the same; for, on the side of Muscovy, the longest day is 18 hours and 30 minutes; but farther towards the north, and near the pole, there is but one day and one night throughout the year. In the province in which Stockholm is seated, the spring and autumn is scarcely to be perceived, for the winter continues nine months, and the summer during the remaining three. In winter the cold is excessive; in summer the heat is almost insupportable, the air being serene all that time. Notwithstanding this, the Swedes live a long while, and it is not uncommon to see 10 people at the same table whose ages make up 1000 years. Those places that are fit for cultivation have scarcely a foot of good earth, for below it is all gravel; for which reason they till the ground with a single ox, and one person may readily manage the plough. For want of manure they burn their superfluous wood, and strew the ashes on the ground, to render it fruitful; however, this practice has for some time been forbid. All their rocks are quite covered with flowers in the summer time, and their gardens have plenty of fruits. The trees are early in blossoming, because the soil is fat and sulphureous, which contributes greatly to the vegetation of plants. Their domestic animals are horses, cows, hogs, goats, and sheep. In the winter time fodder is so scarce, that the inhabitants are forced to unthatch their houses to feed their cattle. With regard to wild beasts, there are bears, wolves, foxes, wild cats, and squirrels. In winter the foxes and squirrels become gray, and the hares as white as snow. There are also elks and reindeer. They have several sorts of fowls, and partridges, woodcocks, and falcons, in great plenty. The silver mines are very extensive; and though they are rich, yet the people who work them have scarcely wherewith to subsist, when the king's duties are paid. The mines of copper are exceeding good, and they get large quantities out of them every year, though not so much as formerly. Likewise the iron mines yield a great deal of iron, and they usually exchange them for the commodities of other countries. But since the Swedes have had manufactories of their own, foreign merchandises have been prohibited; which has reduced the iron to so low a price, that those who work in the mines can scarcely get enough to live upon. The Swedes did not apply to navigation till the year 1644, when their vessels had liberty to pass through the Sound without paying any toll. The vast quantities of the Swedish commodities brought here by the English, put them upon thinking of trade; and now they have a great number of artists and workmen, as well Germans as Scotch, and their manufactories are now in a very good condition. The

innovations introduced by Charles XI. did great injury to trade; and the English, who purchased many things in Sweden, now fetch them from America. The merchandises which the Swedes supply foreigners with, are boards, gunpowder, leather, iron, copper, tallow, skins, pitch, rosin, masts, and all sorts of wooden utensils; and, on the contrary, they are obliged to purchase salt, brandy, wine, linen-cloth, stuffs, tobacco, sugar, spice, and paper. The inhabitants are of a robust constitution, and able to sustain the hardest labour. They are much more polished than formerly; and have several public schools and colleges, where the arts and sciences are taught. Their houses are generally of wood, with very little art in their construction. The roofs, in many places, are covered with turf, on which their goats often feed. There is no country in the world where the women do so much work; for they till the ground, thrash the corn, and row the boats on the sea. The form of the Swedish government has frequently varied. Before the accession of Gustavus I. it was an elective monarchy. By the union of Calmar, in 1397, it was stipulated that the same monarch should rule over Denmark, Sweden, and Norway, to be chosen by the deputies from the states of those three kingdoms assembled at Calmar. By this regulation Sweden became a mere tributary kingdom to Denmark. From this state of subjection to a tyrannical foreign yoke, it was rescued by Gustavus Vasa; on whom the Swedes, in 1523, conferred the sovereignty, and made the crown hereditary in the male issue. He was entrusted with great prerogatives; and these were augmented by Gustavus Adolphus, the right of succession being extended, at the same time, to the female line. In the minority of his daughter, Christiana, the regal powers were greatly circumscribed, and the nobles acquired such an exorbitant authority, as gave great umbrage to the three other orders, of the clergy, citizens, and peasants. This proved a favourable opportunity for Charles XI. to obtain from the states a formal cession of absolute sovereignty, which quietly devolved upon his son Charles XII. Upon the death of the latter, the Swedes conferred the crown upon Ulrica Eleanora, his younger sister, stipulating at the same time great limits to the prerogative. Ulrica resigned the crown to her consort Frederick I. From this period, the Swedish monarchy was the most limited one in Europe, till 1772, when Gustavus III. effected a revolution, by which he regained the most essential royal prerogatives, without, however, being an absolute monarch. He was assassinated in 1792, leaving his son Gustavus Adolphus a minor, who attained his majority in 1796. This prince was deposed in March, 1809; the duke of Sudarmania, his uncle, called to the throne; and the constitution new modelled. In 1811 a French general, Bernadotte, was elected to be crown prince, and in 1818 he succeeded to the throne, by the name of Charles John. The established

religion is the Lutheran, and they have one archbishop, and eleven bishops. The capital is Stockholm.

PORTUGAL, the most western country of the continent of Europe, is 410 miles in length, and 150 in breadth; bounded on the west and south by the Atlantic, and on the east and north by Spain. It is divided into six provinces, Estramadura, Beira, Entre-Minho-e-Douro, Tra-los-Montes, Alentejo, and Algarva. Though Spain and Portugal are in the same climate, the air of the latter is more temperate than that of the former, on account of the neighbourhood of the sea. Corn is not plentiful, because the inhabitants do not attend much to husbandry; and they import Indian-corn from Africa; which is used by the peasants instead of wheat. There is a great number of barren mountains; and yet there is plenty of olives, vines, oranges, lemons, nuts, almonds, figs, &c. &c. and it is famous for excellent wines.—Much salt is also made from the sea-water, especially in the bay of St. Ubes, whence a great deal is exported. The foreign trade consists either of the exportation of the produce of the country, or in the merchandise which is received from its foreign settlements; such as sugar, tobacco, rum, indigo, hides, brasil, and other woods for dying, and many excellent drugs. Besides these, it has gold, silver, diamonds, and other precious stones, from America. The horses of Portugal were formerly in great esteem, but now mules are preferred, and the horned cattle are small and lean. Towards the frontiers of Spain there are mountains, in which was formerly got gold and silver; and the river Tajo, the Tagus of the ancients, was celebrated by their poets for its golden sands. There are mines of iron, tin, lead, quarries of marble, and some precious stones. The principal rivers are the Tajo, Douro, Guadiana, Minho, and Mondego. The Portuguese are debased by indolence and superstition, and so fond of luxury that they spend all their wealth in the purchase of foreign merchandise. The women are addicted to gallantry, for which reason the men are jealous of their wives, and allow them but little liberty. The government is monarchical, but the royal authority is limited; for the sovereign cannot raise any more taxes than were settled in 1674. The established religion is the Roman Catholic, and there were 3 archbishops, and 10 bishops, besides a patriarch; also 3 severe inquisitions; and yet there were a great number of concealed Jews. The authority of the pope was so great, that the king could not confer any benefice without his consent. In 1580, there was a failure in the royal line, and then Philip II. king of Spain, subdued the country; but in 1640, there was a great revolution, and the crown was conferred on John, duke of Braganza, (king John IV.) whose descendants till lately enjoyed it. Lisbon is the capital.—For the late changes in this country, see the article CHRONOLOGY.

SWITZERLAND, or Swisserland, is bounded on the east by

the Tyrol, on the west by France, on the north by Suabia, and on the south by Savoy and Italy. It is about 225 miles in length, and 83 in breadth, and is separated from the adjacent countries by a long chain of mountains, called the Alps, which begin at the Mediterranean Sea, and extend to the Adriatic. There are four passages over them to go into Italy from Switzerland; the first of which is beyond the Lake of Geneva over Mount Cenis, which leads to Savoy; the second begins in the country of the Grisons, and crosses Mount St. Bernard, leading to the valley of Aost, which belonged to Piedmont; the third begins in the country of the Grisons, crosses Mount Simpel-berg, and leads to the duchy of Milan; the fourth crosses Mount St. Gothard, and the bailiwicks of Italy, and terminates in the Milanese. Switzerland is divided into 13 cantons, without comprehending their allies, namely, Lucern, Uri, Switz, Underwald, Zug, Friburg, Soleure, which are Catholics. The Protestant cantons are Zurich, Bern, Basle, and Schaffhausen. Glaris and Appenzell contain both religions. All these cantons were till lately so many republics; and it was the cantons of Switz, Uri, and Underwald, which threw off the Austrian yoke in 1303. The principal lakes are those of Constance, Geneva, Lucern, Zurich, and Neufchatel. The most considerable rivers are the Rhine, the Rhone, the Aar, the Ruess, and the Inn. The principal riches of Switzerland consist of excellent pastures, in which they breed and fatten their cattle. As they leave out their cattle night and day on the mountains, one would think they would be devoured by the wild beasts, and yet it is quite otherwise; for when the beeves perceive a bear, or a wolf, at a distance, they form themselves into a circle, and are ready to receive the enemy with their horns. As for the goats and shammy goats, they feed in flocks on the mountains and in the woods, and they place sentinels on all sides; and when any dangerous animal draws near, a signal is given, and they all get into a place of refuge, where the savage beast dares not come. The inhabitants are all strong robust men, for which reason they are generally chosen by several nations for the military service. The women are tolerably handsome, have many good qualities, and are in general very industrious. The peasants retain their old manner of dress, and are content to live upon milk, butter, and cheese; and there are some of the mountaineers who never have any bread.

ITALY, one of the finest countries in Europe, lying between 7 and 19 degrees east longitude, and 38 and 47 degrees north latitude. On the north and north-east it is bounded by Switzerland and Germany, on the east by the Gulph of Venice, on the south by the Mediterranean, and on the west by that sea and France. Its figure bears some resemblance to that of a boot; its length from Augusta in Savoy to the utmost verge of Calabria, is 600 miles; but its breadth is very unequal, in some places near 400 miles, and in others not above 25. It is the most celebrated

country in Europe, having been formerly the seat of the Roman empire, and, afterward, of that astonishing universal usurpation, the spiritual dominion of the Pope. Italy was divided into a great number of states, which differed much in extent and importance. Between the confines of France and Switzerland, on the west and north-west, were the continental dominions of the king of Sardinia, namely, Piedmont, Savoy, Montserrat, part of the Milanese, and Oneglia. To the north-east are the territories of Venice. South of these were the dominions of the emperor of Germany, namely, part of the Milanese and the Mantuan; and south of these Modena, Mirandula, and Reggio, belonging to the duke of Modena. West of these, the duchies of Parma, Placentia, and Gustalla. To the south of Parma lies the late republic of Genoa, now united to France; and south-east of this, that of Lucca. Hence extends, along the coast of the Mediterranean, the late grand duchy of Tuscany. The Ecclesiastical State, or the territory lately belonging to the Pope, lies north-east and east of Tuscany, between the Gulf of Venice and the Mediterranean; and all south of this is the kingdom of Naples, with its dependent islands, of which Sicily is the principal. Since the revolution in France, the greatest part of Italy north-west of the Pope's dominions, has been united in one government, of which Bonaparte, emperor of France, is now king. The air of Italy is very different, according to the different situations of the countries it contains: in those of the north side of the Apennines, it is more temperate; but on the south it is very warm. The air of Champagne di Roma, and of the Ferrarese, is said to be unwholesome; which is owing to the lands not being duly cultivated, nor the marshes drained; that of the other parts is generally pure, dry, and healthy. The principal rivers are the Po, Tiber, Arno, Adige, and Yar; and there are several fine lakes, as the Maggiore, Lugano, Como, Garda, Perugia, Braccianno, and Celano. The soil, in general, is very fertile. It produces a great variety of wines, and the best oil in Europe; excellent silk in abundance; corn of all sorts, but not in such plenty as in other countries; oranges, lemons, citrons, pomegranates, almonds, raisins, sugar, figs, peaches, apricots, pears, apples, filberts, chesnuts, &c. Most of these fruits were at first imported by the Romans from Asia Minor, Greece, Africa, and Syria, and were not the natural products of the soil. The tender plants are sheltered, in winter, on the north side of the Apennines; but on the south side, they have no need of that precaution. This country also yields good pastures, and abounds with cattle, sheep, goats, buffaloes, wild boars, mules, and horses. The forests are well stored with game, and the mountains have not only mines of iron, lead, alum, sulphur, marble of all sorts, alabaster, jasper, porphyry, &c. but also gold and silver; with a great variety of aromatic herbs, trees, shrubs, and ever-greens.—Wine, oil, perfumes, fruits, and silks, are the principal articles of

exportation; and great sums of money are expended by travellers, in the purchase of pictures, curiosities, relics, antiquities,&c. The Italians are generally well proportioned; but of their complexion they cannot boast. With respect to dress they follow the fashions of the countries on which they border, or to which they are subject, namely, those of France, Spain, and Germany. No country has produced betterpoliticians,historians,poets,musicians,painters, and sculptors; that is, since the revival of the arts and sciences,exclusive of those of ancient times. The Italians are very affable, courteous, ingenious, sober, and ready witted; but extremely jealous,vindictive, lascivious, ceremonious, and superstitious. In their temper they seem to be a good medium between the French and Spaniards; neither so gay and volatile as the one, nor so grave and solemn as the other. The women affect yellow hair, as did formerly the Roman ladies and courtezans; they also use paints and washes, both for their hands and face. The established religion is the Roman Catholic. Their language, a corruption of the Latin, is said to be spoken in its greatest purity at Florence.

HUNGARY, a kingdom of Europe, is bounded on the west by Moravia and the circle of Austria; on the north and northeast by Poland; on the east by Wallachia,Transylvania, and part of Moldavia; and on the south by Servia and the river Drave, which separates it from Sclavonia and Croatia. It is divided into Upper and Lower Hungary; and to these may be added the Bannat of Temeswar, incorporated into the kingdoms of Hungary in 1778. Hungary formerly included Transylvania, Sclavonia, Dalmatia, Servia, Walachia, and other countries. The principal rivers are the Danube, Save, Drave,Theisse,Temes, Leitha,Raab, Waag, Gran, and Maros. The air in the southern parts is unhealthy, occasioned by the lakes and bogs, insomuch that a sort of plague visits them every three or four years, on which account it is called the grave of the Germans. It abounds in all the necessaries of life; and the wine, especially that called Tokay, is excellent. There are mines of gold, silver, copper, and iron; and they have such plenty of game, that hunting is allowed to all. Almost all the towns of Hungary have two names, the one German, and the other Hungarian; and the language is a dialect of the Sclavonian. The government is hereditary in the house of Austria, whether male or female; and the established religion is Popery, though there are a great number of Protestants. No country in the world is better supplied with minerals and baths; and those of Buda, when the Turks had it in possession, were reckoned the finest in Europe. Buda is the capital town of Lower Hungary, and Presburg of the Upper.

ASIA, one of the quarters of the world, inferior in size only to America, but surpassing in extent both Europe and Africa taken together, and lies to the east of Europe. It was so called,

if we are to believe the Greeks, curious in searching after the etymology of words, from Asia, daughter of Oceanus and Thetis: others say that it derived its name from Asius, the son of Atys, king of Lydia; while Bochart is of opinion that it took its name from the Phenician word Asi, signifying the middle; but all this is mere conjecture. As Asia exceeds Europe and Africa in extent of territory, it is also superior to them in serenity of air, fertility of soil, the deliciousness of its fruits, the fragancy and balsamic quality of its plants, spices, and gums; the salubrity of its drugs; the quantity, variety, beauty, and value, of its gems; the richness of its metals, and the fineness of its silks and cottons. It was in Asia, according to the sacred records, that the all-wise Creator planted the garden of Eden, in which he formed the first man and first woman, from whom the race of mankind was to spring. Asia became again the nursery of the world after the deluge, whence the descendants of Noah dispersed their various colonies into all the other parts of the globe. It was in Asia that God placed his once favourite people, the Hebrews, whom he enlightened by revelations delivered by the prophets, and to whom he gave the oracles of truth. It was here that the great and merciful work of our redemption was accomplished by his divine Son; and it was from hence that the light of his glorious gospel was carried with amazing rapidity into all the nations of the world, by his disciples and followers. Here the first Christian churches were founded, and the Christian faith miraculously propagated and cherished even with the blood of innumerable martyrs. It was in Asia that the first edifices were reared, and the first empires founded, while the other parts of the globe were inhabited only by wild animals. On all these accounts, this quarter of the globe claims a superiority over the rest; but it must be owned, that a change has happened in that part called Turkey, which has lost much of its ancient splendour. The other parts of Asia continue much in their former condition, the soil being as remarkable for its fertility, as most of the inhabitants for their indolence, effeminacy, and luxury. This effeminacy is chiefly owing to the warmth of the climate, though in some measure heightened by custom and education; and the symptoms of it are more or less visible, as the several nations are seated nearer or farther from the north. Hence the Tartars, who live near the same latitudes with us, are as brave, hardy, strong, and vigorous as any European nation. What is wanting in the robust frame of their bodies among the Chinese, Moguls, Indians, and all the inhabitants of the more southern regions, is in a great measure made up to them by the vivacity of their minds, and ingenuity of their workmanship, which our most skilful mechanics have in vain endeavoured to imitate.

This vast extent of territory was successively governed in past times by the Assyrians, the Medes, the Persians, and the Greeks

but the immense regions of India and China were scarcely known to Alexander, or the conqueror of the ancient world. Upon the decline of those empires, great part of Asia submitted to the Roman arms; and afterwards, in the middle ages, the successors of Mahomet, or, as they are usually called, Saracens, founded in Asia, in Africa, and in Europe, a more extensive empire than that of Cyrus, Alexander, or even the Roman, when in its height of power. The Saracen greatness ended with the death of Tamerlane; and the Turks, conquerors on every side, took possession of the middle regions of Asia, which they still enjoy. Besides the countries possessed by the Turks and Russians, Asia contains at present three large empires, the Chinese, the Mogul, and the Persian, upon which the lesser kingdoms and sovereignties depend. The prevailing form of government in this division of the globe is absolute monarchy. If any of them can be said to enjoy liberty, it is the wandering tribes, as the Tartars and Arabs. Many of the Asiatic nations, when the Dutch first came among them, could not conceive how it was possible for people to live under any other form of government than that of a despotic monarchy. Turkey, Arabia, Persia, part of Tartary, and part of India, profess Mahometanism. The Persian and Indian Mahometans are of the sect of Hali, and the Turks of that of Omar; but both own Mahomet for their lawgiver, and the Koran for their rule of faith and life. In the other parts of Tartary, India, China, Japan, and the Asiatic islands, they are generally heathens and idolaters. Jews are to be found every where in Asia. Christianity, though planted here with wonderful rapidity by the apostles and primitive fathers, suffered an almost total eclipse by the conquests of the Saracens, and afterwards of the Turks. Incredible, indeed, have been the hazards, perils, and sufferings, of the missionaries, sent to propagate their doctrines in the most distant regions, and among the grossest idolaters; but their labours have hitherto failed of success, owing in a great measure to their own avarice, and the cruelty and injustice of the Europeans, who resort thither in search of wealth and dominion.

The continent of Asia is situated between 25 and 180 degrees of east longitude, and between the equator and 80 degrees of north latitude. It is about 4740 miles in length, from the Dardanelles on the west to the eastern shore of Tartary; and about 4380 miles in breadth, from the most southern part of Malacca, to the most northern cape of Nova Zembla, It is bounded by the Frozen Ocean on the north; on the west it is separated from Africa by the Red Sea, and from Europe by the Levant or Mediteranean, the Archipelago, the Hellespont, the Sea of Marmora, the Bosphorus, the Black Sea, the river Don, and a line drawn from it to the river Tobol, and from thence to the river Oby, which falls into the Frozen Ocean. On the east it is bounded by the Pacific Ocean, or South Sea, which separates it from America; and on

the south by the Indian Ocean : so that it is almost surrounded by the sea. From the richness of its soil, and variety of its valuable products, Asia has been considered as the finest quarter of the globe.

Asia may be divided into the following parts: Turkey in Asia, Arabia, Persia, the Mogul's Empire, with the two peninsulas of the Indies ; Thibet, China, and Corea ; Great and Little Buccaria, with Korasin ; Tartary, Siberia, and the islands. The principal languages spoken in Asia are, the modern Greek, the Turkish, the Russian, the Tartarian, the Persian, the Arabic, the Malayan, the Chinese, and Japanese. The European languages are also spoken on the coasts of India and China. The chief rivers of Asia are the Euphrates and Tigris, in Turkey ; the Indus and Ganges in India ; the Kiang and Hoang-ho, in China ; the Sir-Amu and Wolga, in Western Tartary ; the Saghalia-Ula or Amur in Eastern Tartary ; the Irtish, Oby, Jenisca, and Lena, in Siberia. The lakes are, that prodigious one called the Caspian Sea ; and near that another very large one, but lately known to us, called Aral, or the Lake of Eagles. The Baykal is in Siberia ; the Kokonor near Thibet ; and the Tong-Ping in China. The chief mountains are, the Taurus in Turkey and Persia ; the Imaus, between India and Tibet ; and the Altaic Chain, in Tartary. The Asiatic islands are very numerous, insomuch that some reckon 150,000 ; but of this there is no certainty. However, they may be divided into those of the east, west, south, and south-east. Those that lie on the east of Asia are, the islands of Jesso or Yedso, and Japan, with several small ones on the coast of Korea, the island of Formosa, and the Philippines. Those on the west are the island of Cyprus, in the Mediterranean ; Scandaroon, off Natolia ; and the isle of Rhodes, off Phischio, on the same coast. Those on the south are, the isles of the Maldives, in the Indian Sea ; the isle of Ceylon, off Cape Komorin ; with a great many small ones in the gulph of Bengal. Those on the south-east are, the isles of Sandi, as Sumatra, the isles of Java, Borneo, &c. the Moluccas, the isles of Kombava, Timor, &c. Also the Kurile isles, and those in the sea of Kamtschatka, lately discovered by the Russians.

With respect to the territory or extent of country meant in the New Testament by the word *Asia,* numberless doubts and difficulties have arisen, because it is said, " that *all they* which dwelt in Asia heard the word," &c. Acts xix. 10. To which, with great reason, it has been objected, that Asia being so very extensive, it was impossible, in so short a period, that the gospel dispensation could have been promulgated through it ; and that the meaning, in this and other passages. must be restrained to one of the many countries into which the ancient geographers divided this vast continent. We shall therefore pass over doubtful matters, and proceed to give the reader a brief description of the several countries, according to its present division.

TURKEY in ASIA.—This region extends from the shores of the Archipelago, to the confines of Persia; a space of more than a thousand miles. It is bounded on the north by the Black Sea and the Caucasian mountains; on the east by the Caspian Sea and Persia; and on the south and west by the Red Sea, Arabia, and the Mediterranean. Its geographical position lies between twenty-six and forty-three degrees of east longitude, and between thirty-three and forty-three degrees of north latitude. The whole of the Turkish empire in Asia is estimated at nearly five hundred thousand square miles, and the population is reckoned at ten millions. Turkey is divided into several provinces, as follows;

1. Natolia, or Asia Minor, which includes Natolia, properly so called; Amasia, Aladulia, and Caramania. The principal towns of which are, Smyrna, Bursa, Amasia, Trapezond, Sinope, Ajazzo, Marat, and Satalia.

2. Syria; the principal towns of which are Aleppo, Damascus, Said or Old Sidon, Tripoli; also Balbec, anciently Heliopolis; and Palmyra, anciently Tadmor.

3. Palestine; the capital of which is Jerusalem.

4. Turcomania, or Turkish Armenia; the capital of which is Erzerum.

5 Diarbec, Algezira, or Mesopotamia; the chief towns of which are, Diarbec, and Mousoul.

6. Irak-Arabi, or Chaldea; the chief towns of which are, Bussora, and Bagdat.

7. Curdistan, or Assyria; the chief towns of which are, Nineveh, and Betlis.

8. Choristan; the chief town of which is Bussorah.

9. Circassia, or Tsherkess; part being under the protection of Turkey, part under Russia, and part under Persia.

10. Georgia; the principal town of which is Teflis.

11. Mingrelia; and, 12. Imiretta; the principal town of which is Cotalis.

The Turkish kingdom of Roum extended from the Euphrates to the Hellespont, and from the Euxine to Syria.

In Natolia, or Asia Minor, were the seven churches of Asia, mentioned in the book of Revelation; viz. Pergamos, Laodicea, Philadelphia, Thyatira, Sardis, Ephesus, and Smyrna; but these places, excepting Smyrna, are now mostly in ruins.

South of Natolia is that part which is usually called the *Holy Land*, on account of its having witnessed the sacred mission of Jesus Christ. It is also called *Judea*, from the patriarch Judah. The Jordan is now a very small stream that empties itself into the Dead Sea, near the spot where Sodom and Gomorrah once stood.

Armenia is also styled Turcomania. The ancient Mesopotamia, between the Tigris and Euphrates, corresponds with Diarbec or Algezira. Syria, or the ancient Canaan, is situated on the eastern extremities of the Mediterranean.

The principal river in Asiatic Turkey is the Euphrates; next to this is the Tigris.—The mountains in this country have always been celebrated; these are Taurus, Libanus, and Ararat; on the last Noah's ark rested after the flood.

The chief islands of Asiatic Turkey are, Mytelene, Scio, Samos, Cos, Rhodes, and Cyprus, which produce cotton, silk, oil, fruits, and wines. Turkey is also famous for its carpets and rhubarb.

Of the Turkish cities in Asia, the most populous are, Aleppo, containing about 250,000 inhabitants; Damascus, about 180,000; and Smyrna, about 120,000. Bursa or Prusa is very populous, and was the capital of the Turkish empire, till they passed over to Constantinople, in Europe.

PERSIA is situated between 44 and 70 degrees east longitude, and between 25 and 45 degrees north latitude. It is 1300 miles from east to west, and 1100 from north to south. It is bounded on the north by Georgia, Circassia, and the Caspian Sea, the Sea of Aral, and Tartary; on the east by Cabul, Kandahor, Moultan, and Tatta, in the East Indies; on the south by the Indian Sea and the Persian Gulf; and on the west by Arabia and Turkey. Ispahan, the capital of Persia, lies near half way between the Persian Gulf and the Capsian Sea. Shirauz lies to the south-east of Ispahan. Gombroon or Gomron, opposite the island of Ormus, in the narrow part of the Persian Gulf, is a place of considerable importance. Persia contains 10 millions of inhabitants.

ARABIA.—This country is bounded by Turkey, north; the Indian Ocean, south; the Red Sea, west; and the Persia Gulf, east. Its geographical position lies in east longitude 35 degrees 60 minutes; nor latitude 12 degrees 30 minutes. It is in length, 1300 miles; and in breadth, 1200. The capital is Mecca.

It is divided into three provinces, viz. 1. Arabia Petræa; the chief town of which is Suez, anciently Arsinöe. 2. Arabia Deserta, including Hajaz, a small tract on the Red Sea; the chief towns of which are, Anna, Mecca, Giodda, the port of Mecca, and Medina. 3. Arabia Felix, or Yemen; the chief towns of which are, Sanaa, Mocha, Aden, Hadramut, Mascate, and Oman.

To Arabia Deserta belongs Neged, the interior mountainous country inhabited by the Bedouins, divided into Ared east, and Kirjé west. The chief towns of it are, Aijana, the birth-place of a late prophet named Waheb; and Munfoha, in Ared; and Imama, and Salemia, in Kirjé. It extends eastwards to Oman, on the Gulf of Ormus, and Lahsa or Ahsor, on the Persian Gulf.—Oman is by some considered as the name of a province, of which Maskat is the chief town.

To this division of Asia belongs the Red Sea, Persian Gulf, or Gulf of Bassora, and the Gulf of Ormus; also the Straits of Babelmandel and Ormus.

The two most noted Arabian islands are, Socotra, famed for its aloes; and Bahrin, in the Persian Gulf, for its pearl fishery. The government is under xeriffs, emirs, imans, sheiks, cadis, &c. most of whom are tributary to the Turks, though some of them are independent. Yemen, which is part of Arabia Felix, is a considerable and hereditary principality. Bahrein, a tract on the Persian Gulf, is subject to Persia. Its chief town is Gerra, or Katif.

HINDOOSTAN, or INDIA WITHIN THE GANGES.—*The Empire of the Great Mogul.*—This country, fertile in gold and diamonds, is bounded by Tartary, on the north; Thibet, and the Bay of Bengal, on the east; the Indian Ocean, on the south; and Persia, on the west. Its geographical situation lies in east longitude 66 degrees 92 minutes; north latitude 7 degrees 40 minutes. Its length is 2000 miles; its breadth, 1500; and its capital is Dehli.

It is sometimes divided into Hindoostan Proper, to the north of the Nerbudda; and the Deccan, or the country to the south of that river. But the name of Deccan has been limited to a smaller extent of country, lying to the north of the Kistna, while that to the south is distinguished by the general name of *Carnatic*.

This extensive country is divided into the following provinces and chief towns: Cachemir, Cachemir; Atok, Atok; Penjab, Lahore; Multan, Multan; Benkitch, Banou; Nagracut, Nagracut; Siba, Siba.—Belonging to the Rohillas: Ghor, Ghor; Jesuat, Rajapour; Necbal, Catmandur; Dehli, Dehli; Agra, Agra; Bando, Bando; Tatta or Sindi, Tatta.—Belonging to the Rajpoots: Bhakor, Bhakor; Bundelcund, Callinger, and the Purna Diamond Mines; Jesselmere, Jesselmere; Agimere, Agimere; Soret, Soret.—Belonging to the Mahrattas, in the Deccan: Candish, Burhampour; Balagate, Aurengabad; Berar, Nagpour, Chitur, Chitur; Malwa, Ratipour; Gualeor, Gualeor.—Belonging to the Nabob of Oude: Rotas, Rotasgur; Halebas, Alehabat; Oude, Lucknow and Oude; Benares, Benares, where there is a Gentoo university; Bahar, Patna.—Belonging to Bengal: the province of Burdwan; chief towns, Muscadabat, Burdwan, Casimbajar, Hoogli, Chandenagore, Calcutta, and Midnapour. Province of Dacca; Dacca, and Chittagong.

Hither Peninsula of Deccan, in the Eastern Coast, or Coromandel.—Province of Orixa; chief towns, Orixa, Balifore, Cattock, and Jaggernaut, where there is a famous pagoda.—Province of Telingana; chief towns, Golconda, Hyderabad or Bagnagur, and Dowlatabad.—The Northern Circars, of the same name, for the most part, as their chief towns; which are, Gangam, Chicacol, Rhajamandri, Masulipatnam, Kondovir or Condour.

Carnatic, in the Eastern Coast, or Coromandel.—Province of Jaghire; chief towns, Conjevetam, and Madras or Fort St. George; Arcot, Arcot, Velore, and Paliconda; Pondicherry;

Trichinopoly, Trichinopoly; Tanjour, Tranquebar, Negapatam, and Tanjour; Dindigul, Dindigul; Madura, Madura; Marawa, Ramnad, and Shevigunga; Tinevelli, Palamcotta.—Carnatic, in the Western Coast, or Malabar.—Province of Travancore, Travancore; Cochin, Cochin; Calicut (to the zamorin,) Calicut, Tellicherry, and Cannanore; Misore (Tippoo's country), Mysore, Seringapatam, Bangalore, Adoni, Condanore, Rachori, and Cuddapah; Canara, Mongalor.—In the Deccan, and Concan.—Province of Visiapour; Goa, Visiapour, Rajapour, and Bombay; Cambay or Guzerat, part belonging to the Mahrattas; Surat, Cambaya, Amedabad, and Dieu.

CapeComorin,is the most southern part of the Hither Peninsula.

The principal rivers are, the Indus or Sinda, in the higher part of its course called the Attuck; Ganges, Gagra, Jumma, Burrampooter or Sanpoo, Nerbudda,Andi,Ganga or Goadaveri, Mahanada, Krisna, Coleroon or Tanjore river, Caveri; of which the Indus,Ganges,and Krisna,are reckoned by the natives *holy rivers.*

The mountains are, the Gauts or Balagate; Naugracut; Sewalick, where the Ganges descends into the plains of Hindoostan; Himmaleh, under which the Ganges passes, and then rises at the cavern called the Cow's Mouth; Kentaisso, on the opposite sides of which the Ganges and Burrampooter are thought to take their rise; the Bootan mountains.

The population is said to be as follows: the Mahometans or Moors, about 10 millions; the Indians, Hindoos, or Gentoos, about 100 millions.

The Gentoos are divided into four great tribes: 1. Brahmins, the priests and philosophers of the nation. 2. The Khatry Cast, consisting of soldiers,who are also their civil magistrates in peace. 3. The Bhyse, consisting of husbandmen and merchants. And lastly, the Soodera, or artisans and servants. These are subdivided into about eighty-four inferior tribes or casts. There are various other divisions of them, as Talingas, Malabars, Mahrattas,Canaras, Malleallums, Rajahpoots, Nyars, &c. The Pariars or Chandalas are the outcasts, the most degraded of all.

The Gentoo priests are called *Brahmins.* Their doctrines are contained in the *Shastah,* which is a commentary on the *Vidam,* their sacred book,which has been long lost. The Shastah is written in the Shanscrit, a dead language, understood by the Brahmins alone; but lately restored by the indefatigable sir William Jones.

Of their various mendicant sects, the Faquirs are generally Mahometans, though many of them also are Hindoos; and the Joghis are idolaters. The Banyans profess the Gentoo religion, and act as brokers to the Europeans.

GOVERNMENT.—The Great Mogul is an absolute prince; bu his viceroys, called nabobs, rajahs, subahs, &c. have little more than a nominal dependence on him. The present Mogul, (1806,) is Shah Allum.

Hindoostan, soon after the Mahometan conquest of it, was divided into eleven soubahs or provinces. These were again divided into circars, and the circars into purgunnahs. The eleven soubahs were, Lahore, Multan (including Sindy,) Agimere, Dehli, Agra, Oude, Allahabad, Bahar, Bengal, Malwa, and Guzerat. A twelfth was added towards the west sources of the Indus, called Cabul: it included Candahar. Three more were added from conquests in the Deccan, Berar, Candish, Amednagur; fifteen in all.

Invasions and revolutions, however, have altered many of these divisions. Cashemir and Sindy are tributary to the king of Candahar. The possessions of the sheiks extend from the Indus to the neighbourhood of Dehli; and from Cashmere and Thibet to Bakhor, on the Indus, including Atoc, Multan, and Lahore. Dehli is the residence of the Great Mogul, who, after long being dependent on a Mahratta chief, has lately been delivered from this thraldom by the British arms.

There are two Mahratta states or empires: the Poonah or Western, and the Berar or Eastern, Mahrattas. Their possessions extend from east to west, across the widest part of the peninsula, from Guzerat to Bengal; and from Agra northward, to the Krisna southward, and are about 1000 miles in length, and 700 in breadth.

The Western Mahratta chiefs acknowledge the ram-rajah to be their sovereign, and the peishwah to be his vicegerent. The ram-rajah resides at Sattarah, and the peishwah resides at Poona, not far from Bombay.

Berar, the other division, though very extensive, is less powerful. The nabob of it lives at Nagpour. To him also belongs the greater part of Orixa.

The Rajpoots are usually divided into the two tribes or classes of Rathore and Chohan. Their prince is sometimes called *Rana*.

The nabob of Oude possesses, under the protection of the English, extensive dominions; the soubah of Oude, Allehabad, the Douab, or country between the Ganges and Jumma towards their junction, Benares, and the eastern parts of Agra and Dehli. His principal city is Lucknow. His revenue is thought to amount to 2 millions and a half; the population of his dominions to near 20 millions.

The nizam or soubah of the Deccan, though he possesses extensive dominions, is tributary to the Mahrattas. His capital, Hyderabad, is near Golconda.

The five northern circars, so called as lying to the north of Madras, and extending to Orissa, are Cicacole, Rajamundry, Ellore, Condapilly, in possession of the English; and Guntoor, called also Condovir, belonging to the nizam.

The dominions of the nabob of the Carnatic, extend from Guntoor and the Krisna to Cape Comorin, including the dependencies of Tanjore, Madura, &c. His residence is at Arcot, from which

he takes the title of "Nabob of Arcot." Four of the circars' the Jaghire, and Cuddalore, depend on Madras.

Hyder Ali, and Tippoo Sultan's territories touched upon Visiapour and Guntoor to the north; Madura and Travancore to the south; the mountains of Sautgad and Attore to the east; and the sea on the west. They included Mysore, Bednore, Canara, Condanore, &c. Seringapatam was his capital. His revenue was supposed to amount to five millions sterling, and his army to three hundred thousand men. In 1792 and 1799 the English became masters of these dominions, and appointed a descendant of the race which had been dethroned by Tippoo, rajah of the Mysore.

The Polygars and Colleries are some Indian tribes, who maintain a sort of wild independence in the mountains chiefly towards the southern extremity of the peninsula. The Sheiks, Jets, and Afgans, are to the north. Lahore is the capital of the Sheiks.

The general revenues of Hindoostan, in the time of Aurungzebe, were estimated at thirty-two millions sterling; supposed equal to five times that sum, according to the present value of money. The number of his subjects has been calculated at sixty millions, which is indeed supposed to be the present population of what then formed his empire. The population of Calcutta is supposed to be half a million.

The revenue of the English possessions in Bengal, Bahar, and Orixa, is about five millions and a half sterling. Calcutta is their principal settlement. The Madras revenue is above one million. At Bombay and Bencoolen, the expences have much exceeded the receipts. The population subject to Great Britain is calculated from twelve to fourteen millions.

INDIA BEYOND THE GANGES.—The countries lying between Hindoostan and China, occupy what is called *the farther Peninsula.* Its geographical position is in east longitude ninety-two degrees one hundred and nine minutes; north latitude one degree thirty minutes. Its length is about two thousand miles; and its breadth about one thousand. It is bounded by Thibet and China, on the north; Straits of Malacca, on the south; Bay of Bengal; and Hindoostan, on the west; and China, and the Chinese Sea, on the east. It contains the following kingdoms.—1. Part of Upper, Middle, and Lower, Thibet; chief towns, Tonkar, called also Boronthala, Lassa, and Putala.—2. Napaul and Bootan, the southern part of Thibet; chief towns, Bassasudon, and Catmandu. —3. The Birman empire, comprising Azem or Achem; whose chief towns are, Chamdara, Tipera, Kirganu, or Ghargan; Aracan, or Reccan, Aracan; Ava or Burma, Ava, Ummerapoora; Pegu, Pegu; Martaban, Martaban; Siam, Siam, Bankok.—4. Tonquin China; chief town, Cacao or Keccio.—5. Laos, Langtshang —6. Cochin-China, Toanhoa.—7. Cambodia, Camboja.—8. Siampa, Padram.—9. Peninsula of Malaya, Malacca.

The chief rivers are, Sampoo or Burrampooter, or Thibet

river, which rises near the Ganges, and joins it at its mouth though in their course they become more than a thousand miles asunder; Domea, Pegu, Mecon, Menan, Anan, Iratoady, on which is built the capital, Ummerapoora, Holi-Kian.

The Birmans are only separated from the Hindoos by a very narrow range of mountains; yet the dispositions of the two people are extremely different. The Birmans are a lively inquisitive race, irascible and impatient. The Birman empire is divided from Asam on the north; and on the west a range of mountains separate it from the British dominions in Bengal.

Ava is of considerable extent, though obviously tending to ruin and decay. Pegu, south of Ava, is supposed to be the golden Chersonesus of the ancients. The Birmans, like the Chinese have no coin; but silver in bullion, and lead, are current among them.

Malaya, or Malacca, contains several kingdoms and provinces. The inhabitants are called *Malays*, or *Malayans*; and the country is celebrated for its numerous wild elephants. Opposite to this coast are the islands of Andaman and Nicobar. On a barren isle to the east of the Andamans is a volcano, which emits showers of red-hot stones. A British settlement has been formed on the greater Andaman, for convicts from Bengal.

Siam is situated in a large vale, between two ridges of mountains; and its river, Meinam, which signifies the *mother of waters*, is celebrated among the oriental streams.

The elephants of Siam are distinguished for sagacity and beauty. The trees on the banks of the Meinam are finely illuminated with swarms of fire-flies which emit and conceal their light as uniformly and alternately as if it proceeded from a machine of the most exact contrivance.

Cambodia is celebrated for the camboge gum. The chief river in Tonquin-China is Holi-Kian, which passes by Kesho, the capital.

The Birman empire, lately established by the chief Alombra, consists of Achem, Aracan, Ava, part of Pegu, Martaban and Siam. The population of it is supposed to be about sixteen millions. The capital town is Ummerapoora.

The countries bordering on China are said to pay tribute to the Chinese. The others are independent. They are all of them in a very barbarous state.

CHINESE EMPIRE.—The Chinese empire extends from those parts of the Chinese and Japannic seas to the rivers Sarason and Sihon in the west, a space of nearly five thousand British miles; and from the Uralian mountains in the north to the most southern parts, it extends more than two thousand miles. This vast empire consists of three principal divisions: 1. That of China Proper. 2. Chinese Tartary, or the territory of the Monguls or Manshurs. 3. The region of Thibet.

CHINA PROPER.—This is bounded on the east and south by the Sea; on the north by the great wall, and the desert of Shamo; and on the west by Thibet. It lies between twenty and forty-one degrees north latitude, and between ninety-nine and one hundred and twenty-one degrees east longitude from London. The population is estimated at three hundred and thirty-three millions; and the square miles of surface at more than one million and a quarter.

CHINESE TARTARY.—This portion of the Chinese empire extends from the seventy-second degree of east longitude to the one hundred and forty-fifth; and the breadth, from the northern frontier of Thibet to the Russian confines, is something more than twelve hundred British miles. It is bounded on the south by the great wall of China, and the northern limits of Thibet; on the east by the sea; on the north it is separated from Russia, and the western boundary is supplied by the mountains of Belur Tagg or the Cloudy Mountains, which divide the Chinese empire from Balk and the Greater Backaria; while the range on the west of the lake Palkati separates the Calmucs subject to China from the Kirguses of Independent Tartary.

THIBET.—The boundaries of this part of the Chinese empire are not by any means distinctly marked; they seem to be, Tartary on the north, China Proper on the east, the Birman and the Mogul empires on the south and west. According to the most recent maps, Thibet extends from the seventy-fifth to the one hundred and first degrees of east longitude, and from the twenty-seventh to the thirty-fifth degrees of north latitude. Its population is not estimated at more than half a million.

China is celebrated for its immense and industrious population; for the variety of its manufactures and peculiar productions; for the excellence of its inland navigation; and for the jealous policy of its government towards other nations.

The Chinese wall, though built these two thousand years, is in a high state of preservation; it is fifteen hundred miles long, and broad enough for five horsemen to travel abreast.

The chief cities of China Proper are Pekin, Nankin, and Canton. Pekin contains two millions of inhabitants, and the others not less than one million each.—The imperial canal intersects China Proper from north to south, and employed thirty thousand men forty-three years for its construction.—Corea is subject to China, and is considered as a part of it.

The largest of the Chinese islands, which are very numerous, and scattered along the southern and eastern coasts, are Formosa and Hainan. The isles of Leookeoo, which consist of thirty-six in number, between Formosa and Japan, constitute a small civilized kingdom, subject to China.

The Chinese empire possesses rich mines of all the precious metals. It produces abundance of corn, rice, and fruit.

Chinese Tartary is inhabited chiefly by the Eastern and Western Monguls; the former conquered China in 1644, under whose government the empire still continues. It produces corn, rice, and valuable skins. The island of Segalien, or Tehoka, belongs to Chinese Tartary.

Thibet is included between China and Hindoostan. The chief town is Lassa.—The islands contiguous to the Chinese empire, beside those already noticed, are as follow: Japan, forming an extensive, rich, and remarkable empire, the population of which is calculated at thirty millions. The largest island is Niphon; and the chief towns are Jeddo, Miaco, the spiritual capital, and Nagasaki. These islands trade only with the Dutch and Chinese. The Jesso islands, to which the Danes trade for furs; and the island of Macao, which lies in the Bay of Canton, and belongs to the Portuguese.—Besides these, there are many small islands dependent on Japan; among which is Fatfisio, the place of exile for the disgraced grandees.

The principal rivers of the Chinese empire are, Yamour, Argun, Hoan-ho, Kian-ku, otherwise called Whambo or the Yellow River, and Kiam or Blue River. These rivers, in their sources, their separation, and their junction, resemble the Ganges and Burrampooter, but much exceed them in length of course. They receive many tributary streams.

The revenue of China is calculated at sixty-six millions.—The population of Pekin is calculated at two millions; that of Nankin is said to be as great. Canton is thought to contain a million and a half. This empire in the whole is said to contain four thousand four hundred walled cities.

The EASTERN ARCHIPELAGO.—This contains, 1. The islands of Sunda, or the Sumatran chain, which comprise Sumatra, Java, Balli, Lombock, Florez, and Timor, with several others of less importance. 2. Borneo, and some smaller surrounding islands. Borneo is, excepting New Holland, the largest island in the world. 3. The Manillas, or Philippine islands, including Luzon, Mindanoo, Palawa, Mindora, Pany, Negros, Zebu, Leyta, Samar, and several hundred smaller islands. 4. The Zelebezian isles, viz. Celebes, Boutan, and the surrounding small islands. Boutan is governed by a Mahometan sultan. 5. The Spice islands, including the Moluccas: these are Gilola, Ceram, Bouro, Oby, Amboyna, Banda, Tidore, Ternate, &c. These famous islands produce nutmegs, cloves, and all the valuable spices.

TARTARY.—The limits of this country are not correctly ascertained; but it is supposed to be about 3000 miles in length, and 2000 in breadth. It is bounded by the Frozen Ocean, north; Pacific Ocean, east; Russia in Europe, west; China, India, and Persia, south. Part of it belongs to Russia, part to China, part to Persia, and part of it is independent.

The Delai, or Grand Lama, in Thibetian Tartary, is not only

sovereign pontiff, but also receives adoration as a deity. The khans, who do not affect being independent, pay tribute to one or other of the powerful neighbouring empires. Thibet is distinguished into *upper, lower,* and *middle.* The greater part of it is under Chinese influence.

RUSSIAN TARTARY, or RUSSIA IN ASIA.—This immense portion of the Russian dominions extends almost the whole length of Asia. It is bounded on the north by the Artic Ocean, on the east by the seas of Kamtschatka and Ochotsk; the western frontiers correspond with those between Asia and Europe; on the south, the river Cuban, and part of the Caucasian chain of mountains, divide the Russian territory from Turkey and Persia; the Altain mountains separate it from the Chinese empire: and farther to the east the boundaries of Russia, the river Amour, and the Noblonnoy mountains. The chief towns are, Astracan, at the mouth of the Wolga; Azof, on the Asiatic side of the Don; Tobolsk, the capital of Siberia; Kolywan, famous for its silver mines; and Irkutsk, the chief mart between Russia and China.

The general appellation of this country was *Siberia;* the population of the whole of it not exceeding three millions and a half. The kingdoms of Cazan and Astracan were added to the Russian empire in the same century as Siberia, The population of all Russian Asia is calculated at about five millions.

AFRICA, one of the four grand divisions of the globe, is bounded on the north by the Mediterranean, which separates it from Europe; on the north-east by the Red Sea, which separates it from Asia, save where they are connected together by the isthmus of Snez; its other shores are washed by the Ocean. The greatest part of this largest of all peninsulas, lies within the torrid zone; hence the inhabitants are all of dark complexions; and in the centre and southwards they are quite black. The mountains and rivers of Africa are very large; the country is extremely fertile, except in those extensive tracts that are unsupplied with moisture; there the country is parched up, and the heat becomes insupportable. In crossing these arid deserts, the sands are sometimes so raised by the winds, that whole caravans are buried under them: on the other hand, nothing can be more beautiful than the fertile parts of Africa; the luxuriancy of the landscape, continually clothed with all the variegated beauties of spring, summer, and harvest, surpasses all description; and the variety of animals is much greater here than in the other parts of the globe.

Africa lies between the parallels of 37. 0. north, and 35. 0. south latitude, and between 17. 0. west, and 51. 0. east longitude, and may be divided as follows: Morocco, Algiers, Tunis, Tripoli, Barca, Egypt, Biledulgerid, Zaara, Negroland, Guinea; Upper Ethiopia, including Nubia, Abyssinia, and Abex; Lower Ethiopia, Loango, Congo, Angola. Benguela, Mataman, Ajan, Zan-

guebar, Monomotapa, Monoemugi, Sofala, Terre de Natal, and Caffraria. The length of Africa, from the Cape of Good Hope to the most northern part, is 4600 miles; and its greatest breadth, from Cape Verd to Cape Guardafui, is 3500. This country is very little known to Europeans, especially the interior parts. The travels of Mr. Bruce, and the Missionaries of the African and Sierra Leone Companies, have afforded some information of Abyssinia, and of the countries in the neighbourhood of the Niger.

The STATES OF BARBARY, are bounded on the north by the Mediterranean Sea, and consist of Morocco, part of the ancient Mauritania, and Fez; Algiers, part of the ancient Mauritania, and Africa Proper; Tunis, part of Africa Proper; Tripoli, part of Africa Proper, and Barca, the ancient Lybia; and Biledulgerid, the ancient Numidia, and part of Mauritania. The respective chief towns are Morocco, Mequinez and Fez, Algiers, the city of Tunis, about 30 miles from the ruins of Carthage, Tripoli, &c. &c.

EGYPT, is bounded on the north by the Mediterranean Sea; on the east the isthmus of Suez and the Red Sea divide it from Syria and Arabia; on the south it has Nubia; and on the west, Barca, and the unknown parts of Africa. Grand Cairo, in 30 degrees north latitude, and 32 degrees east longitude, is considered as the capital of Egypt; the other towns of note are, Alexandria, Rosetta, and Damietta, on the coast. The Pyramids of Egypt lie to the south-west of Cairo; the perpendicular height of the largest is said to be 500 feet, and its base covers 11 acres of ground.

NUBIA, is bounded on the north by Egypt, on the east by the Red Sea, on the south by Abyssinia, and on the west by Bornou. The chief towns are Sennaar, and Dongolo, on the Nile.

ABYSSINIA, is bounded on the north by Nubia, and on the east by the Red Sea and the Streights of Babelmandel. It lies between 6 and 20 degrees north latitude, and 26 and 44 degrees east longitude. The capital is Gondar, in 12. 34. north latitude, longitude 37. 33. east; the other towns are Dixan, Axum, and Masuah.

ZAHARA, *or the Desert.* This country extends from the Atlantic Ocean, along the tropic of Cancer, to Egypt and Nubia. It contains Fezzan, a kingdom south of Tripoli, the chief town Mourzouk; Bornou, and Cashan or Kassinia, south of Fezzan; and various other kingdoms with which we are unacquainted. Mr. Lucas embarked for Tripoli on the 18th of October, 1788, with instructions from the African Society, to proceed over the Desert of Zahara to Fezzan, and to transmit by the way of Tripoli whatever intelligence he might receive there of the interior of Africa, and to return by way of Gambia, on the coast of Guinea; but he was prevented from proceeding farther than Mesurata, a town on the coast of Tripoli.

NIGRITIA, *or Negroland,* is bounded on the north by Zahara, and on the east by the kingdom of Dur Fur, and on the south by Guinea. The chief towns are Sego, Silla, and Tombuctoo, in lat. 16. 30. north, longitude 1. 33. east. The river Niger runs through this country from *west to east,* contrary to the course of the Gambia, which was formerly considered as a branch of the Niger. Mr. Lucas, in his communications to the African Society, says, "The rise and termination of the Niger are unknown, but the course is from *east to west,*" and so great is its rapidity, that no vessel can ascend its stream; and no boats, &c. are to be seen on this river: it abounds with fish, which the natives leave in undisturbed possession of the waters. But, on the contrary, Mr. Mungo Park says, it flows from *west to east,* is covered with canoes, and that there are a great number of villages on its banks inhabited by fishermen.

SIERRA LEONE, is situated in 8. 12. north latitude, and 12 degrees west longitude. A settlement was formed at this place in the year 1791, for the purpose of introducing knowledge and civilization into the interior of Africa; which the Missionaries, sent out for that purpose, though they have made some progress therein, find a very arduous undertaking.

GUINEA, lies to the east of Sierra Leone, and contains the Grain Coast, Ivory Coast, and Slave Coast. The English trade up the river Gambia, and the western coast of Guinea, where (till the abolition of the slave trade) they exchanged their woollen and linen manufactures, hardware, and spirituous liquors, for the persons of the natives. A negro's wealth consists chiefly in the number of his family, whom he sells like so many cattle. Gold and ivory, next to the slave trade, form the principal branches of African commerce.—The Portuguese are in possession of the east and west coast of Africa, from the equator to the tropic of Capricorn.

CONGO, *or Lower Guinea,* extends from the equator to about 18 degrees south latitude, and comprehends the kingdoms of Loango, Congo, Angola, Benguela, &c. The Portuguese have a great many settlements on the coast. The chief towns are Loango, St. Salvadore or Banza, St. Paul de Loanda, and St. Philip or Benguela.

CAFFRARIA, *including the Hottentots' Country,* is bounded on the north by Nigritia or Negroland, and Abyssinia; on the west by Lower Guinea and the sea; and extends as far southward as the Cape of Good Hope. The inhabitants are called Caffrees and Hottentots.

The EASTERN COAST OF AFRICA. On this coast are Monomotapa, including Sofala; Zanguebar, including Mozambique, Moruca, Quiloa, Mombaza, and Melinda; to which may be added the coast of Ajan, comprehending the republic of Brava, and the kingdoms of Magadoxa and Adel. The chief

towns from north to south are Sofala, Quilimane, Mozambique, on a small island of that name, Quiloa, Mombaza, Melinda, &c. belonging to the Portuguese, and of considerable importance to that country on account of their trade to the East Indies.

ISLANDS. The following islands are in the Atlantic Ocean from north to south, viz. the Madeiras, the Canaries, the Cape de Verd Islands, St. Thomas, St. Matthew, Ascension, and St. Helena.

The Madeira Islands are three in number, situated in 32 degrees north latitude, and between 16 and 17 degrees west longitude. The largest, called Madeira, is 75 miles long, and 60 broad; the capital town is Funchall, in 32. 38. north latitude, and 17. 5. west longitude. They were discovered by the Portuguese in 1519, to whom they are now subject.

The Canary Islands lie between 13 and 18 degrees west longitude, and betweee 27. 42. and 29. 25. north latitude. They are seven in number, viz. Grand Canary, Teneriffe, Palma, Gomera, Forteventura, Langarote or Manzarote, and Ferro.—They belong to the Spaniards. The island of Teneriffe is a mountain in the form of a sugar-loaf, about 15 miles in circumference, and 13,265 feet in height, called the Peak of Teneriffe, and is a volcano. Ferro lies in 27. 47. north latitude, and 17. 40. west longitude, and was formerly considered as the first meridian by most of the European geographers.

Cape de Verd Islands. These islands are situated between 22. 41. and 24. 48. west longitude, and between 14 and 17 degrees north latitude, about 348 miles west of Cape Verd. They were discovered by the Portuguese in 1460, to whom they still belong. They are about 20 in number; the principal are St. Jago, Brava, Fogo, Mayo, Bonavista, Sal, St. Nicholas, St. Lucia, St. Vincent, Santa Cruz, and St. Antonio. On the coast of Africa, south of Cape Verd, is the small island of Goree, belonging to the English, of considerable importance on account of its trade.

St. Thomas, Anaboa, Prince Edward's Island, and Fernando Po, are situated in the Gulf of Guinea, and furnish vessels with fresh water and provisions as they pass by. They were discovered by the Portuguese: but in the year 1778, Anaboa, and Fernando Po, were ceded to the Spaniards. They extend about 4 degrees on each side of the equator, and from 5 to 9 degrees east longitude.

St. Matthew is a small island, lying in 7. 30. west longitude, and 1. 30. south latitude. It was discovered and planted by the Portuguese, who have now deserted it, and left it without inhabitants.

Ascension is situated in 14. 16. west longitude, and 7. 56. south latitude. It is about twenty miles round, and uninhabited; bu has a convenient harbour, where the East-India ships generally touch to furnish themselves with turtle, which are plentiful here.

St. Helena is situated in 5. 46. west longitude, and 15. 55. south latitude. It is a steep rock about 21 miles in circumference, accessible only at the landing place on the east side of it, which is well defended by batteries. The homeward-bound East-India ships generally stop here.

ISLANDS in the INDIAN OCEAN, from north to south, viz. Zocotra, Babelmandel, Comora, Madagascar, Mauritius, and Bourbon.

Zocotra is situated in 53 degrees east longitude, and 12 degrees north latitude, about 30 leagues east of Cape Guardafui, on the continent of Africa. It is about 80 miles long, and 54 broad; a populous plentiful country, and has two good harbours. This island is noted for its production of aloes: the chief town is Tamarin on the north of the island.

Babelmandel is situated in 44 degrees east longitude, and 12 degrees north latitude. It commands the streight at the entrance of the Red Sea, and preserves the communication between Arabia and Abyssinia.

Comora. The Comora islands are five in number, situated between 41 and 46 degrees east longitude, and between 10 and 14 degrees south latitude; about the middle way between the island of Madagascar and the continent of Africa. Hinzuan or Joanna is the principal island. The East-India ships bound to Bombay usually touch here for refreshments.

Madagascar, the largest of the African islands, is situated between 43 and 50 degrees east longitude, and between 12 and 26 degrees south latitude. It is near 1000 miles long, and from 2 to 300 broad. There is a great number of small islands, laid down in maps, to the north-east of Madagascar, and in the streight or channel of Mozambique, which separates Madagascar from the continent.

Mauritius, Maurice, or *Isle of France.* This island is situated in 57 degrees east longitude, and 20 degrees south latitude. It is of an oval form, about 150 miles in circumference, with a spacious harbour. It was formerly subject to the Dutch, but it is now in the possession of Britain. The chief town is Fort Louis.

Bourbon is situated in 36 degrees east longitude, and 21 degrees south latitude, about 300 miles east of Madagascar. The French first settled here in 1672, after they were driven from the island of Madagascar. It is now in the possession of Britain.

AMERICA, the largest of the four grand divisions of the globe, is bounded on all sides by the ocean, and stretches, in its extensive range, through every inhabited latitude or climate in the world; and the waters on its northern extremity seem to be bound up in everlasting frost. The parts that have a vertical sun are so near the sea, or the lofty Andes, constantly covered with

snow, that they experience not the excessive heats of Africa; and the complexion of the natives, or aborigines, is by no means very dark; it is generally of a reddish or copper colour, from the streights of Magellan to the border of Hudson's bay. This immense continent is divided into N. and S. America, which are joined by the isthmus of Darien. Its mountains, rivers, and lakes, are the largest in the world. America took its name from Americus Vesputius, a Florentine, who having accompanied Ojeda, a Spanish adventurer, thither, and drawing up an amusing history of his voyage, insinuated therein, that he had first discovered that continent. The discovery of America was made so lately as 1491, by Christopher Columbus, a Genoese, a bold adventurer, a patriot, and a man of humanity. At that time the authority of the pope, over the whole world, was generally acknowledged throughout Europe. He had granted to the Portuguese, all the lands, islands, &c. they had discovered, or might discover, to the eastward of the Azores; hence the other Europeans were deprived of the advantages of the trade to the East-Indies, by the Cape of Good Hope, which the Portuguese had but lately discovered. The costly articles of the East, which had heretofore come through the Red Sea and the Mediterranean, and afforded to the Genoese a lucrative trade, were now brought by the Cape of Good Hope. Columbus saw, with concern, the loss his country had sustained, and concluding the earth to be round, proposed to evade the force of the pope's bull by sailing to India by a western course. His countrymen were not better geographers than the bishop of Rome. They treated his schemes as the reveries of a madman. He tried other courts of Europe with similar success; till at length Isabella, queen of Spain, sold even her jewels to fit him out for the expedition. America furnishes most of the vegetable and mineral productions to be found in the other parts of the world, together with a variety of valuable drugs and other commodities, which were unknown here before its discovery. The animals on the north are much the same all round the pole, but, in the southern parts of America, they are generally more diminutive and feeble; and some tribes there are, which, if ever they existed in the old world (as Europe, Asia, and Africa, are called,) have there become extinct, while the other most strong and savage quadrupeds seem not to have ever arrived here. Nearly the same variety of birds is found in the new world as in other parts, and some there are that are peculiar to the climate. America is divided into North and South, being separated by the Isthmus of Darien, or Panama, at Porto Bella, in 9. 33. north latitude, and 79. 44. west longitude; extends a distance of 9000 miles from lat. 56. 0. south to the impenetrable depths of the N. frigid zone, where it nearly extends through every degree of western longitude from London; and varies in its breadth, from its narrowest part, 60 miles, at the isthmus of Da-

nien, to 3690, its greatest breadth, across the northern part of N. America.

NORTH AMERICA includes the United States, Spanish America, British America, and the independent Indian nations. The inland seas of North America are the gulfs of Mexico, California, and St. Lawrence; with Hudson's Bay, and Davis's Straits.

The gulf of St. Lawrence is closed by the island of Newfoundland, and the great sand bank, about four hundred miles in length, celebrated for the cod fishery. The Lakes Superior, Michigan, Huron, Wennipeg, and Slave lake, are the grandest in the world, and might, with propriety, be denominated seas. The rivers are also on a grand and extensive scale. Of these, the principal are the Missouri or Mississippi, the Ohio, and the St. Lawrence.

The most celebrated mountains are the Apalachian, passing through the territory of the United States. Among these the Ohio has its rise. Excepting the Apalachian, all the mountains in North America lie west of the United States.

UNITED STATES.—These are situated on the eastern part of North America; and are bounded on the east by the Atlantic, and on the west by the river Mississippi; on the northern boundaries are the river St. Lawrence and the lakes; and on the south the United States are bounded by the Floridas. Louisiana has lately been united to these states by purchase. Before the cession of Louisiana, the United States lay between the sixty-fifth and ninetieth degrees west longitude. The square acres have been estimated at six hundred and forty millions, including fifty-one millions of acres of water. The population is estimated at six millions.

The United States are celebrated for the excellence of their constitution, which provides for political liberty and individual security. The inhabitants are justly famed for their ardent love of freedom, for their hospitality and industry, and for the great attention which they pay to agriculture and commerce. Their ample territory is divided into northern, middle, and southern. The northern states are Vermont, New Hampshire, Massachusetts, Connecticut, and Rhode Island. The middle states are New York, New Jersey, Pennsylvania, Delaware, and the territory on the north-west of the Ohio. The southern states are Maryland, Virginia, Kentucky, North Carolina, Georgia, and the country south of Kentucky. The chief cities and towns are Washington, the capital, Philadelphia, New York, Boston, Baltimore, and Charlestown.

These states are in a very flourishing and improving condition, and promise eventually to become one of the most powerful and happy communities in the world. They export to Europe iron, copper ore, timber, pitch, potash, skins, corn, tobacco, rice, cotton, &c.

New Hampshire lies between 42. 50. and 45. north latitude;

and between 71. and 72. 34. west longitude; being 150 miles from north to south, and 80 miles from east to west. It is bounded on the north by Quebec, in Canada; on the east by the Province of Main, and south-east by the Atlantic Ocean; on the south by Massachusetts, and on the west by Vermont. New Hampshire is divided into five counties: the chief town is Portsmouth, on the east side of Piscataqua river, about two miles from the sea, lat. 43. 5. north lon. 70. 30. west; Exeter, Charleston, and some other towns of less note, are contained in New Hampshire; in the western part, in lat. 43. 33. north, near the banks of the Connecticut river, Dartmouth college is situated. The White Mountains here are covered with snow and ice, nine or ten months in the year, and are said to be 9000 feet above the level of the sea. The chief rivers are Connecticut, Piscataqua, and Merrimack.

Massachusetts lies between 41. 20. and 42. 50. north latitude; and between 69. 44. and 73. 14. west longitude. It is above 69. miles from north to south, and 150 from east to west; is bounded on the north by New Hampshire, on the west by New York and Vermont, on the south by Connecticut, Rhode Island, and the Atlantic, and on the east by the Atlantic and Massachusetts Bay. It is divided into 14 counties: Boston, in 42. 25. north latitude, and 70. 35. west longitude, is the capital. The harbour of Boston is large enough to contain 500 ships at anchor, while the entrance is so narrow as scarcely to admit two ships abreast. The other towns of note are Salem, Newbury, and Worcester; Springfield, Deerfield, and a number of pleasant towns, are situated on the banks of the Connecticut river. Havrard College, or Havrard University, is situated about four miles west of Boston, in a pleasant village called Cambridge, and is considered as the first literary institution on the continent of America. The principal capes on the coast of Massachusetts are Cape Ann, on the north side of Boston Bay, and Cape Cod on the south. Cape Cod is the extremity of a peninsula resembling a reaping-hook. There are eight light-houses on the coast of Massachusetts, for the direction of mariners.

Province of Main, including Sagadahok, lies betweeu 43 and 48 degrees north latitude, and between 66. 14. and 71. 14. west longitude. It is about 340 miles from north to south, and 240 from east to west; is bounded on the north-west by the highlands, on the east by the river St. Croix, and a line due north from its source to the high lands; this river and line divide the Province of Main from Nova Scotia; on the south-east it has the Atlantic Ocean, and on the west New Hampshire and Vermont. Portland is the capital, which has an excellent harbour; Kittery, on the west side of the Piscataqua river, is noted for ship-building; York, Wells, Berwick, Arundel, Biddeford, and Scarborough, are considerable towns. The mountain called Agamemticus, is a noted land-mark for sailors, which stands about 8 miles from

York, in 43. 16. north latitude. The principal rivers are Piscataqua, Kennebeck, Penobscot, and St. Croix.

Rhode Island, lies between 41. 30. and 42. north latitude, and between 71. 14. and 72. 14. west longitude; is bounded on the north and east by Massachusetts, on the west by Connecticut, and on the south by the Atlantic. Newport is the principal town, in lat. 41. 35. north. This island is about 13 miles long, and 4 broad. Providence is on the continent, north-west of Newport, in lat. 41. 51. north, situated on the river Providence, about 30 miles from the sea; at this town is a college, called Rhode Island College. Bristol is a neat little town on the continent, about 16 miles north of Newport.

Connecticut, lies between 41. and 42. 2. north latitude, and between 72. 14. and 73. 44. west longitude; is about 70 miles from north to south, and 78. from east to west. It is bounded on the north by Massachusetts, on the east by Rhode Island, on the south by the Sound, which divides it from Rhode Island, and on the west by New York. It is divided into eight counties; Hartford, situated on the west side of Connecticut river, about 50 miles from the sea, is the capital; the other towns of note are Newhaven, New London, Norwich, and Middleton. At Newhaven is a college, called Yale College. Connecticut is the most populous, in proportion to its extent, of any of the United States; the number of inhabitants in 1790 being 237,946.

New York, lies between 41 and 46 degrees north latitude, and between 73. 44. and 80. 14. west longitude; is about 340 miles from north to south, and 330 from east to west; is bounded on the south-east by the streight which divides New Jersey from Long Island; on the east by Connecticut, Massachusetts, and Vermont; on the north and north-west by the river Iroquois, or St. Lawrence, and the Lakes Ontario and Erie; on the south by the parallel of 42 degrees north latitude, which divides it from Pennsylvania; and on the south-east by New Jersey. It is divided into 16 counties; New York, in 40. 43. north latitude, and 74. 5. west longitude, on a small island, is the capital; the other towns of note are Albany, on the west side of Hudson's river, in 42. 36. north latitude; Hudson, on the east side of Hudson's river, in 42. 23. north latitude; Poughkeepsie, Lasingburgh, Kingston, and Skennectady, are all near Hudson's river. At New York is a college, called Columbia College. Hudson's river is one of the most important in the United States; it rises in the mountains between the lakes Ontario and Champlain, and empties itself into York Bay; the river St. Lawrence rises in Lake Ontario, runs north-east-ward, passes by Quebec, and falls into the Gulf of St, Lawrence: Montreal stands on an island in this river. The Susquehannah river rises near the Allegany mountains, east of Lake Ontario, and falls into the Bay of Chesapeak. The lakes are almost innumerable: Lake Champlain divides New York from

Vermont; it is about 80 miles long, and in the broadest part 14 miles: Crown Point and Ticonderago are situated on this lake. Lake Ontario is of an oval form, about 600 miles in circuit; Lake Erie, which is infested with myriads of water snakes, rattle-snakes, and serpents, is about 300 miles long, and 40 broad, and has a communication with Lake Ontario, by means of the river Niagara, which is about 30 miles in length. About 18 miles within the river Niagara the waters of Lake Erie fall down a precipice of 140 feet perpendicular height, with an astonishing rapidity, and about nine miles farther there is a second fall, of nearly the same height, and the noise of these falls may be heard between 40 and 50 miles.

New Jersey, lies between 39. and 41. 24. north latitude, and between 74. and 75. 30. west longitude; is 160 miles from north to south, and 70 from east to west. On the east it is bounded by Hudson's river, a streight which divides it from Long Island, and by the Atlantic Ocean; on the south and west by Delaware bay and river; and on the north by a line drawn from a branch of Delaware river, in 41. 24. north latitude, to a point in Hudson's river, in 41 north latitude. It is divided into 13 counties. Trenton, on the east side of Delaware river, in 40. 15. north latitude, is their largest town; the other towns of note are Burlington, Perth, Amboy, Brunswick, Princeton, Elizabeth Town, and Newark. There are two colleges in New Jersey, one at Princeton, called Nassau Hall, the other at Brunswick, called Queen's College.

Pennsylvania, is situated between 39. 43. and 42. north latitude, and between 74. 54. and 80. 14. west longitude; is 158 miles from north to south, and 280 from east to west. On the east the Delaware river divides it from New Jersey; on the north the parallel of 42. north latitude divides it from New York; on the south the parallel of 39. 43′ 18″ north latitude divides it from the States of Delaware, Maryland, and Virginia; and on the west it is bounded by a meridian line, drawn from the parallel of 39. 43′ 18″ north latitude, in 75. 8. west longitude, to the parallel of 42. north latitude. It is divided into 20 counties. Philadelphia is the capital of Pennsylvania, and (till lately) of the United States, and is situated on the west bank of Delaware river, in 39. 56′ 55″ north latitude, and in 75. 13′ 30″ west longitude. The American Philosophical Society, for promoting useful Knowledge, is held at Philadelphia, as well as several other institutions of public utility. The other towns of note are Lancaster, Carlisle, and Pittsburgh in 40. 26. north latitude, longitude 80. west. The city of Washington, latitude 38. 53. north, long. 77. 43. west, about 144 miles south-west of Philadelphia, on the river Potomac, partly in Virginia and partly in Maryland, on a territory called Columbia, is now considered as the capital of the United States; and when finished will be one of the finest cities in the world: the princi-

pal streets are from 40 to 50 yards wide, are all straight, cross each other at right angles, and run either north or south, or east and west. The Allegany mountains run through Pennsylvania in a north-east direction ; the Delaware river receives the Schuylkill, and several other small rivers, and discharges itself into Delaware Bay below Philadelphia ; the Susquehannah runs through Pennsylvania from north to south, and falls into the Bay of Chesapeak ; and the Allegany river rises east of Lake Erie, and falls into the Ohio before Pittsburgh.

Delaware, lies between 38. 30. and 40. north latitude, and between 75. 13′ 30″ and 76. 58′ 30″ west longitude ; is about 100 miles from north to south, and 16 miles from east to west. It is bounded on the north by the territorial line, which divides it from Pennsylvania, (the territorial line is an arch of a circle described with a radius of 12 English miles, from Newcastle as a centre, and the western boundary is a tangent to this circular arch,) on the east by Delaware river and bay : and on the south and west by Maryland. The Delaware State is divided into three counties ; of which the chief towns are Dover, Newcastle, Wilmington, and Milford.

Maryland, lies between 37. 56. and 39. 43′ 18″ north latitude, and between 75. 13′ 30″ and 79. 43′ 30″ west longitude ; its greatest extent from north to south is 110 miles, and from east to west about 140 miles ; but above a sixth part of this extent is water. The Bay of Chesapeak runs through the middle of Maryland. It is bounded on the north by Pennsylvania ; on the east by Delaware and the Atlantic Ocean ; on the south, south-west, and west, by Virginia, from which it is separated by the Potomac river. Maryland is divided into 18 counties, 10 on the west and 8 on the east of Chesapeak bay. Annapolis is the capital of Maryland, and the richest town of its size in America ; the other towns of note are Baltimore, in 39. 21. north latitude, Fredericktown, and Hagarstown. The University of Maryland is at Annapolis ; in 1782, a college was instituted at Chesterton, called Washington College.

Virginia, lies between 36. 30. and 40. north latitude, and between 75. 13′ 30″ and 90. east longitude ; it is about 240 miles from north to south, and 800 from east to west. It is bounded on the north by Maryland, Pennsylvania, and the river Ohio ; on the west by the Mississippi ; on the south by Carolina ; and on the east by Maryland, the Bay of Chesapeak, and the Atlantic Ocean, Virginia is divided into 74 counties ; the chief town is Richmond, situated on Fluvannah, or James river, in 37. 40. north latitude, and 77. 55. west longitude ; the other towns of note are Alexandria, on the Potomac river, Fredericksburgh, on the Rappahannock, Petersburg, and Williamsburg. The Potomac, Rappahannock, and Fluvannah, or James river, fall into the Bay of Chesapeak, as well as some others of less note ; the Roanoke falls

into Albemarle Sound, and though it be drawn in maps of a considerable magnitude, yet it is nowhere navigable but for canoes,

Kentucky, lies between 36. 30. and 39. 30. north latitude, and between 83 and 90 degrees west longitude; is about 200 miles from north to south, and 380 from east to west. It is bounded on the north-west by the river Ohio; on the south-west by Cumberland river, which falls into the Ohio; on the south by North Carolina; on the east by Sandy river, which falls into the Ohio in 83 degrees west longitude, and a line drawn from the source of the Sandy river directly south, till it strikes the northern boundary of north Carolina, in 36. 30. north latitude. Kentucky is divided into nine counties; the chief town is Lexington; in 38. 25. north latitude, and 85. 14. west longitude; it stands on a small river, called Elkhorn, which falls into Kentucky river; the other towns of note are Leestown, west of Lexington, Louisville, on the Ohio, Bardstown and Harrodsburg, on the Salt river: all the rivers of Kentucky fall into the Ohio.

Tennassee, is situated between 35 and 36½ degrees of north lat. and between 81 and 91½ degrees west long. being about 104 miles in breadth, and 580 in length; is bounded on the north by Kentucky and part of Virginia, on the east by the Iron and Bald mountains, on the south by the Tennassee river, and on the west by the Mississippi. Tennassee is divided into 14 counties; the chief town is Knoxville, containing a college, called Blount College: the other towns of note are Nashville, and Jonesborough.

Indiana, is a tract of land lying on the Ohio river, in 38. 30. north latitude, and 81. 30. west longitude. It was ceded to William Trent, and twenty-two other Indian traders, in 1768; it is comprehended in Virginia.

North Carolina, lies between 34. and 36. 30. north latitude, and between 76. 14. and 91. 14. west longitude; is 150 miles from north to south, and 800 from east to west. It is separated on the north from Virginia by a line running along the parallel of 36. 30. north latitude from the Atlantic to the river Mississippi; on the east it is bounded by the Atlantic: to the west by the river Mississippi; and on the south by South Carolina and Georgia. North Carolina is divided into 58 counties; the principal towns are Newbern, Edenton, Wilmington, Washington, Tarborough, and Hillsborough, all near the eastern coast. Pamlico Sound is a kind of lake or inland sea; Dismal swamp lies between Pamlico and Albemarle Sound; Cape Hatteras lies in 35. 16. north latitude, and 75. 54. west longitude, to the south of which are Cape Lookout, and Cape Fear. Cape Hatteras and Cape Lookout are situated on a bank of sand, scarcely a mile wide, covered with small trees or bushes: through this bank are several inlets, and the only one which will admit ships of burden into Pamlico Sound; it is in latitude 35. 10. north, called Ocrecock Inlet.

South Carolina, lies between 32. 35. north latitude, and between

78. 40. and 84. west longitude; is about 200 miles from north to south, but the extent westward is not exactly known. It is bounded on the east by the Atlantic Ocean, on the north by North Carolina, and on the south-west and south by the Savannah river, which divides it from Georgia, and on the west by the Allegany mountains. South Carolina is divided into 35 counties; the principal town is Charleston, on the conflux of Ashley and Cooper rivers: the other towns are Beaufort on Port Royal island, George Town, Columbia, &c. Catabaw, a town belonging to the Catabaw Indians, is situated in 34. north latitude, on the boundary-line between North and South Carolina. The principal rivers are the Savannah, Santee, and Edisto, which all fall into the Atlantic.

Georgia, lies between 31. and 35. north latitude, and between 80. 14. and 91. 14. west longitude; is about 280 miles from north to south, and 640 from east to west; bounded on the east by the Atlantic Ocean, on the south by East and West Florida, on the west by the river Mississippi, and on the north and north-east by South Carolina. Georgia, at present, is divided into 11 counties, the capital town is Augusta, situated on the south-west bank of Savannah river, in 33. 39. north latitude, and 82. 14. west longitude; the other towns of note are Savannah, Sunbury, Brunswick, Frederica, in the island of St. Simon, and Louisville on the Ogeche river. The Savannah river partly divides Georgia from South Carolina: the Ogeche river, Alatamaha river, St. Mary's river, and several others, empty themselves into the Atlantic Ocean.

There are several tribes of Indians in Georgia; the Muskogee or Creek Indians inhabit the middle part, the Seminolas inhabit the country near Apalachicola and Flint rivers, and the Chactaws or flat-heads, and the Chicasaws, inhabit the tract of country bordering on the Mississippi.

Louisiana, is bounded on the east by the river Mississippi, on the west by New Mexico, and on the south by the Gulf of Mexico, the northern boundary unknown; the chief town is New Orleans, situated on the east side of the river Mississippi, 105 miles from its mouth, in lat. 29. 58. north, long. 89. 53. west.

The Western Territory, is bounded on the north by the lakes, on the west by the river Mississippi, on the east by Pennsylvania, and on the south by the Ohio river. This territory contains between two and three hundred millions of acres, upwards of forty millions of which is water. The Lake of the Woods lies to the north-west, and is about 70 miles long, and 40 broad. Rain Lake, or Long Lake, is about 100 miles long, but not 20 broad in any part. Lake Superior lies between 46 and 50 degrees north latitude, and between 84 and 93 degrees east longitude, is upwards of 1500 miles in circumference, and contain several islands, the largest is 100 miles long, and 40 broad; the other lakes are Huron, about 1000 miles in circuit, and Lake Michigan.

Vermont, is bounded on the north by the river St Lawrence

and part of Canada, on the east by Connecticut river, which separates it from New Hampshire, on the south by Massachusetts, and on the west by New York; the chief town is Benington, in 42. 42. north latitude, and 73. 30. west longitude.

ISLANDS *contiguous to the United States.* The principal islands are Cappawk, Martha's Vineyard, and Nantucket, on the coast of Massachusett's; York Island, Long Island, and Staten Island, on the coast of New York; James' Island, John's Island, Edisto, Port Royal, St. Helena, &c. on the coast of South Carolina; and Skidaway, Wassaw, Ossabaw, St. Catherine's, &c. on the coast of Georgia, extending from the Savannah river to the river St. Mary. And the Bermudas, lat. 32. 45. north, longitude 63. 30. west, about 300 miles east of Carolina, belong to England.

BRITISH AMERICA.—*New Britain* comprehends that tract of country which lies north of Canada, round Hudson's Bay, extending from 50 degrees of north latitude towards the North Pole, commonly called the Esquimaux country, including Labrador, and New North and South Wales. This is in general a mountainous, cold, barren country, abounding with lakes, rivers, bays, streights, &c. which take their names from the English navigators. The inhabitants are said to resemble the Laplanders, and Samecides, of Europe. The countries round Hudson's Bay abound with animals, whose skins and furs bring immense profits to the Hudson's Bay Company, who have the exclusive privilege of trading to this place by a charter granted in 1670. This company has several forts, Rupert, Moose, and Albany, on James' Bay; the factory of Flamborough, on Hey's river; York-fort, on Nelson's river; Prince of Wales fort, on Churchhill river, &c.

Canada, or the Province of Quebec, lies between 45 and 52 degrees north latitude, and extends from 61 degrees west longitude, westward towards the Pacific Ocean. It is bounded by Labrador, Hudson's Bay, and New South Wales, on the north; on the east by the river St. Lawrence, which divides it from Nova Scotia; on the south by the river St. Lawrence, the lakes Ontario, Erie, Huron, Superior, &c. which separate it from the United States of America; and on the west by unknown lands. Quebec is the capital of Canada; it is built on a rock on the banks of the river St. Lawrence, about 320 miles from the sea: Montreal is nearly as large as Quebec, and stands on a beautiful island in the river St. Lawrence, about 120 miles south-west of Quebec. The town called Trois Rivieres, situated on the conflux of three rivers, between Quebec and Montreal, is a place of considerable resort for the several tribes of Indians.

Nova Scotia, lies between 44. 8. and 49. north latitude, and between 60. 50. and 67. west longitude: is about 350 miles in length, and 250 in breadth. It is bounded by the river St. Lawrence on the north, by the gulf of St. Lawrence and the Atlantic Ocean on the east, by the Atlantic Ocean south, and by

Canada and New England on the west. Nova Scotia is divided into two governments; the southern is called New Brunswick. Halifax is the capital of Nova Scotia, situated on Chebucto Bay; the other towns of note are Annapolis, on the Bay of Fundy, and St. John, on the river St. John, which falls into the Bay of Fundy. The principal bay and gulf are, the Bay of Fundy and Gulf of St. Lawrence; the less bays are, Chenigto and Green Bay, on the isthmus which joins the north part of Nova Scotia to the south, and the Bay of Chaleurs on the north-east, the bay of Chebucto on the south-east, &c.

ISLANDS *contiguous to Nova Scotia.* Newfoundland lies between 46. 30. and 51. 30. north latitude, and between 52. 20. and 59. 18. west longitude, is about 350 miles long, and 250 broad; is noted for the cod-fishery upon the shoals, called the banks of Newfoundland, the largest of which is about 600 miles in length: the chief town is St. John, in 47. 32. north latitude, and 52. 20. west longitude; the other towns are Bonavista and Placentia. Newfoundland is separated from New Britain by the Streights of Beleisle. Cape Breton lies between Newfoundland and Nova Scotia; the town of Louisburg is in 45. 54. north latitude, and 59. 49. west longitude. St. John lies in the Gulf of St. Lawrence, west of Cape Breton, and north of Nova Scotia, and is a pleasant fertile island, about 60 miles long, and 40 broad.

SPANISH DOMINIONS in NORTH AMERICA.—*East and West Florida,* are situated between 25 and 31 degrees north latitude, and between 80. 44. and 90. west longitude; is bounded on the north by Georgia, on the south by the Gulf of Mexico, on the west by the river Mississippi, and on the east by the Atlantic Ocean, and the Streights of Bahama. East Florida is a peninsula stretching southward towards the island of Cuba, and when connected with West Florida resembles the letter L. inverted. St. Augustine, in lat. 29. 57. north, long. 81. 21. west, is the capital of East Florida; and Pensacola, in 30. 15. north lat. and 87. 94. west long. is the capital of West Florida.

New Mexico, including California, lies between 99 and 120 degrees west longitude, and extends from 23. 30. north latitude, to an unlimited latitude northward; is bounded by unknown lands on the north, by Louisiana on the east, by Old Mexico and the Pacific Ocean on the south, and by the Pacific Ocean on the west. The northern part is called New Mexico; the eastern part, near the Gulf of Mexico, New Leon; the middle part, New Biscay; the eastern part of the Gulf of California, New Navarre; and the western part, the Peninsula of California. The chief town is Santa Fe, on the river Bravo, in 36. north latitude, and 104. west longitude.

Old Mexico, or New Spain, extends from Porto Bello, in lat. 9. 33. north, long. 79. 44. west, and Panama, lat. 8. 48. north, long. 80. 15. west, to 23. 30. north latitude; is divided into the pro-

vinces of Mexico, Yucatan, Honduras, Mosquitos Shore, Costa Rica, and Veragua.

Of Mexico Proper, the chief towns are Mexico, lat. 19. 54. north, lon. 100. 6. west; Vera Cruz, lat. 19. 12. north, lon. 97. 24. west; and Acapulco, or Aquapulco, lat. 17. 10. north, lon. 101. 40. west. Vera Cruz is noted for being the place where Fernando Cortez landed when he undertook the conquest of Mexico, and the rendezvous of the Spanish flota, to receive the produce of the gold and silver mines of Mexico. Acapulco sends annually a rich ship to Manilla; and another returns, laden with the most valuable commodities of the East Indies.

Of Yucatan, the chief towns are Campeache, lat. 19. 41. north, lon. 92. 54. west; Merida, Valladolid, and Salamanca; all near the coast. Campeache is noted for its logwood.

Of Honduras, and the Mosquitos Shore, the chief towns are Valladolid and Truxillo, near Cape Honduras. Honduras is noted for producing mahogany and logwood.

Of Costa Rica, the chief town is Carthago. On the north of Costa Rica is a large lake called Nicaragua, containing several islands, and has a communication with the Caribbean Sea by the river St. Juan.

Of Veragua, and part of Darien, the chief towns are St. Jago, Panama, and Porto Bello.

SOUTH AMERICA lies between 55. 58. south, and 12. 10. north latitude, and between 35. and 81. 30. west longitude; is 4730 miles from north to south, viz. from Cape de la Vela to Cape Horn, and 2590 miles from east to west, viz. from Cape St. Roque to Cape Blanco, along the parallel of 5 degrees south latitude; is bounded on the north by the Caribbean Sea and the Isthmus of Darien, which separate it from the West Indies and North America; on the east by the Atlantic Ocean, which divides it from Africa; on the south by the Southern Ocean; and on the west by the Pacific Ocean. South America comprehends Terra Firma, Guiana, Amazonia, Peru, Brazil, Paragua, Chili, and Patagonia.

Terra Firma, is bounded on the north by the Caribbean Sea, on the east by the Atlantic Ocean and Guiana, on the south by Amazonia and Peru, and on the west by the Pacific Ocean. A line drawn from Porto Bello to Panama is considered as the boundary between North and South America, and in this place the isthmus is only 60 miles across. Porto Bello, lat. 9. 33. north, lon. 79. 44. west. Panama, Carthagena, Tolu, St. Martha, Venezuela, and Cumana, are the principal towns. The whole of Terra Firma is subject to the viceroy of New Grenada, who resides at Santa Fe de Bogota. Caraccas, a district of Terra Firma, opposite the island of Curaçoa, is a powerful state, almost independent of the Spanish government. The river Oronoco runs through this country, and falls into the Atlantic a little south of the island

of Trinidad. Tolu is noted for its balsam, which is produced from a tree resembling a pine.

Peru, is bounded on the north by Terra Firma, by a ridge of mountains called the Cordilleras-de-los-Andes on the east, by Chili on the south, and by the Pacific Ocean on the west. Lima, lat. 12. 1. south, long. 76. 43. west, is the capital of Peru, and of the Spanish dominions in South America: the other towns are Quito, near the equator, and Potosi, noted for its silver mines, in 20. south latitude. The above mountains, on the east of Peru, run from north to south along the coast of the Pacific Ocean, from the Isthmus of Darien or Panama, to the Streights of Magellan, an extent of 4500 miles: their height is as remarkable as their length, for though part of them are within the torrid zone, they are constantly covered with snow; Chimborazo, the highest of the Andes, is 20,633 feet above the level of the sea, of this about 2400 feet from the summit are always covered with snow. Carazan was ascended by the French astronomers, and is said to be 15,800 feet high, which is 2535 feet higher than the Peak of Teneriffe.

Chili, is bounded on the north by Peru, on the south by Patagonia, on the east by Paraguay, and on the west by the Pacific Ocean; the principal towns are St. Jago and Baldivia.

Paraguay, or La Plata, is bounded on the north by Amazonia, on the east and north-east by Brazil, on the south by Patagonia, and on the west by Peru; the principal town is Buenos Ayres, situated on the south side of the river La Plata, about 200 miles from its fall, and here the river is upwards of 20 miles wide.

PORTUGUESE AMERICA.—*Brazil*, is bounded on the north and east by the Atlantic Ocean, on the south by the mouth of the river La Plata, and on the west by a ridge of mountains which divide it from Paraguay; the principal towns are St. Salvadore, Pernambucco, and Rio Janeiro, or St. Sebastian. Brazil, in 1808, became the residence of the royal family of Portugal, but the king has now returned to his native country.

FRENCH and DUTCH AMERICA.—*Guiana*, an old French settlement, is bounded on the west and north-west by Terra Firma, on the south by Amazonia, and on the east by the Atlantic Ocean. Surinam or Paramaribo, a Dutch settlement, produces indigo, sugar, cotton, tobacco, gum, and wood for dyeing. The woods are full of monkeys, and large serpents. The toad is remarkable here for its enormous size and ugly form.

AMAZONIA, is bounded on the north by Terra Firma and Guiana, on the east by the Atlantic Ocean and Brazil, on the west by Peru, and on the south by Paraguay. The river Amazon is considered one of the largest rivers in the world. Amazonia is

very little known to Europeans; the Indian nations which inhabit it are reported to be very numerous.

PATAGONIA.—The southern extremity of America is called Patagonia; this country is full of high mountains, which are covered with snow most of the year.

ISLANDS *contiguous to South America.—Trinadad,* lies between 9. 30. and 10. 45. north latitude, and between 60. 36. and 61. 30. west longitude, and is separated from Terra Firma by the Streights of Paria. This island produces sugar, tobacco, indigo, ginger, &c. and now belongs to the English.

Falkland Islands, lie in 52. south latitude, and 60. west longitude. They were discovered by Sir R. Hawkins in 1594, and were considered of importance to England, because they served as a port for our ships in their expeditions to the South Seas: they now belong to Spain.

Terra del Fuego, or Fogo Land, is separated from Patagonia by the Streights of Magellan; the southern extremity is called Cape Horn, round which all ships pass from the Atlantic to the Pacific Ocean; and is in lat. 55. 58. south, long. 67. 20. west.

Chiloe, lies on the coast of Chili, in 74. west longitude, and 43. south latitude; it belongs to the Spaniards, and contains some good harbours well fortified.

Juan Fernandes, lies in 33. 30. south latitude, and 78. 37. west longitude. The Spaniards have a small settlement on this island. Juan Fernandes is noted for having given rise to the celebrated romance of *Robinson Crusoe.*

The Gallipago Islands, are situated on the equator, in 89. west longitude, and belong to Spain.

The Pearl Islands, lie in the Bay of Panama, and contain several plantations belonging to the inhabitants of the town of Panama.

The WEST INDIES.—The islands called the West Indies lie between 11. and 28. north latitude, and between 59. 51. and 86. 15. west longitude. The islands to the west and north-west of Porto Rico, are the Bahama Islands, Cuba, Jamaica, and St. Domingo. The islands which lie to the east and south-east of Porto Rico, are called the Caribbee Islands, or the Great and Little Antilles; and include the Virgin Islands, and the Leeward and Windward Islands. These islands were thus distinguished by our sailors; for in sailing to the West Indies, they always endeavoured to make the small island of Deseada, in 16. 24. north latitude, and 61 degrees west longitude: now the apparent motion of the sun is from east to west, and the air is rarefied in that direction; the denser air rushing forward to restore the equilibrium, makes almost a constant east wind; the wind will therefore blow continually on the left or larboard side of the vessel.

Bahama Islands.—These islands lie between 22 and 27 degrees north latitude, and 73 and 81 degrees west longitude: they are

very numerous, but only one of them is inhabited, and they belong to England. The island of Providence, which is fortified by England, lies in 25. north lat. and 77. 25. west long.

Cuba, lies between 74. 4. and 85. 15. west longitude, and between 20. and 23. 30. north latitude, is about 700 miles long, and 90 broad. The principal towns are St. Jago, opposite the island of Jamaica, and the Havannah, opposite East Florida. It belongs to Spain.

Jamaica, lies between 76. 10. and 78. 31. west longitude, and between 17. 42. and 18. 40. north latitude, being about 150 miles in length, and 57 in breadth. The chief towns are Spanish Town, Kingston, Port Royal, and Savannah. This is the most valuable island in the West Indies belonging to England.

St. Domingo, lies between 68. 35. and 74. 22. west longitude, and between 17. 30. and 20. north latitude, being 360 miles in length, and 170 in breadth: the chief towns are St. Domingo, and Port au Prince. It formerly belonged to the French and Spaniards, but in 1795 the Spanish part was ceded to the French. This island has since been made an independent government by the negroes, called the Empire of Hayti.

Porto Rico, lies between 65. 38. and 68. 24. west longitude, and between 18. 10. and 18. 41. north latitude. It is about 180 miles long, and 30 broad. This island belongs to Spain, and the chief town is Porto Rico.

The Virgin Islands, extend from 52. 40. west longitude, to the east end of Porto Rico. Anguilla, Anegada, Virgin Gorda, and Tortola, belong to England; St. Martin's to the French; and St. Thomas, St. Julius, and Santa Cruz, to the Danes.

The Leeward Islands, lie to the north and north-west of Dominica. Dominica, Marigalante, Montserrat, Antigua, St. Christopher's, Barbuda, and St. Bartholomew, belong to the English, St. Eustatia to the Dutch; and Guadaloupe to the French.

The Windward Islands, lie to the south and south-east of Dominica. Tobago, St. Lucia, St. Vincent, Barbadoes, and Grenada, belong to the English; Martinico to the French. The islands on the coast of Terra Firma are innumerable; the principal are Curaçoa and Margaretta, belonging to the Dutch.

NEW DISCOVERIES in the PACIFIC OCEAN.—*The Northern Archipelago,* consists of several clusters of islands between the peninsula of Kamtschatka, in Asia, and the western coast of North America. The northernmost are called Clerk's Islands; Bhering's Islands, and Fox's Islands, lie to the east of Kamtschatka, and the Kuerile Islands to the south.

The Island of O-Taheitee, is situated in 17 degrees south latitude, and 149 degrees west longitude. It consists of two peninsulas, and contains several excellent bays and harbours; it is about 30 leagues in circuit.

The Society Islands, lie between 16 and 17 degrees south latitude, and between 150 and 152 degrees west longitude. The principal are Huaheine, Ulitea, Otaha, Bolabola, and Marua. Huaheine is about 31 leagues north-west of O-Taheitee, and its productions are exactly the same.

Oheteroa, is situated in 22 degrees south latitude, and 150 west longitude, and is about 13 miles in circumference. The inhabitants are lusty and well made; their principal weapons are lances, made of etoa-wood, which is very hard, and some of them are near 20 feet long.

The Marquesas, a groupe of islands, first discovered by the Spaniards; the largest of them, called La Dominica, is situated in 9 degrees south latitude, and 139 west longitude. The inhabitants are well made, of a tawny complexion, and greatly resemble the natives of O-Taheitee.

The Sandwich Islands, lie between 19 and 22 degrees north latitude, and between 155 and 159 west longitude; they are 12 in number, and the largest of them is called O'why'hee. The air of these islands is, in general, salubrious, and many of the vegetable productions are the same with those of the Society Islands. The inhabitants resemble those of O-Taheitee.

The Friendly Islands, are about 20 in number; the principal of which, called New Amsterdam by Tasman, who first discovered it, lies in 21 degrees south latitude, and 175 west longitude, and is about 21 miles long, and 13 broad.

New Zealand, is between 34 and 48 degrees south latitude, and between 166 and 186 east longitude. It consists of two large islands, separated by a streight about 5 leagues broad, called Cook's Streights. The inhabitants are robust, of a dark complexion, fierce, and warlike.

The New Hebrides, are situated between 14 and 21 degrees south lat. and between 166 and 177 east longitude; they consist of the following islands, viz. Tierra del Espiritu Santo, Mallicollo, St. Bartholomew, Isle of Lepers, Aurora, Whitsuntide, Ambryn, Immer, Appee, Three Hills, Sandwich, Montague, Hinchinbrook, Shepherd, Eorromango, Erronan, Annatom, and Tanna.

New Caledonia, lies a little south-west of the New Hebrides, between 20 and 23 degrees south latitude, and between 163 and 168 east longitude; is about 87 leagues long, and 10 broad. The inhabitants are stout, tall, and well proportioned, and their colour a dark chesnut-brown. A few leagues eastward of this island are two small islands, called the island of Pines, and Botany island.

New Holland, lies between 10. 30. and 43. 5. south latitude, and between 111 and 153 degrees east longitude. Its greatest length, from west to east, viz. from Shark's Bay to Sandy Cape, is 2670 miles, and its breadth from north to south, viz. from Cape York to the extremity of Van Dieman's Land, is 2200 miles. The convicts are transported from England to this island; and the prin-

cipal settlement is *Sydney Cove*, near Port Jackson. *Norfolk Island*, situated in 29. south latitude, and 168. east longitude, and 1200 miles east of New Holland, is intended to serve as a granary for Port Jackson.

New Guinea, lies between 1 and 12 degrees south latitude, and between 131 and 155 east longitude. It is separated from the north part of New Holland by a streight, through which Captain Cook sailed. The country is diversified by high hills, interspersed with groves of cocoa-nut trees, plantains, bread-fruit trees, &c. and affords from the sea a variety of delightful prospects.

New Britain, is situated to the north of New Guinea, in 4 deg. south latitude, and 151 east longitude. It abounds with high hills and large trees. Eastward of New Britain, in the streights which separate it from the neighbouring large islands, lie a great many smaller ones, which appear very fertile.

New Ireland, a long narrow island, is separated from the north part of New Britain by a streight, through which Captain Carteret passed in the year 1767. It abounds with a variety of trees and birds. To the north-west of this island lies a cluster of 20 or 30 islands; one of considerable extent was called New Hanover; the rest were called the Admiralty Islands.

The Pelew Islands, are a cluster of small islands between 5 and 9 degrees north latitude, and between 130 and 136 east longitude, from Greenwich, lying in a north-east and south-west direction: they are long but narrow, of a moderate height, and well covered with wood. The principal island is Corooraa, of which the town of Pelew is the capital.

The Navigators' Islands, were discovered by Bougainville, and explored by De la Perouse, in 1787; they are 10 in number. At the island of Maouna, Mr. de Langle, captain of the Astrolabe, and eleven officers and sailors, were massacred by the natives, who are represented as thievish, treacherous, and ferocious. These islands lie in 14 degrees south latitude, and 169 west longitude.

Ingram's Islands, were discovered by Captain Joseph Ingram, of Boston, in America, on the 19th of April, 1791. They lie north-north-west of the Marquesas, in 9 degrees south latitude, and in 140. 30. west longitude; they are seven in number.

The NORTH-WEST *Coast of* AMERICA. From the observations made by Captain Cook, on the inhabitants of Prince William's Sound, lat. 59. 33. north, long. 147. 21. west, to lat. 64 north, it was conjectured that there was a communication by sea between Hudson's Bay and the Pacific Ocean. The weapons of the inhabitants, their implements for hunting, fishing, &c. were the same as those of the Esquimaux Americans. The existence, however, of any such communication is disproved by the voyage of Capt. Vancouver, who, during the summers of 1792, 1793, and 1794, accurately surveyed the whole of the western coast of N. America, from lat. 30. to 60.

CHRONOLOGY.

CHRONOLOGY is a due and orderly arrangement of events and transactions, according to the time in which they happened; and is of the greatest importance to the study of history, by discovering a chain of causes and effects in the various and complicated occurrences of life.

The knowledge of it is attained by means of epochas or eras, which denote some determinate points or periods of time, from whence the succession of time is calculated and numbered, and the connexion of space or disunion ascertained.

Epochas or eras differ from each other in different states and countries, according to the historical circumstances which gave rise to them.

Every civilized country must have some mode of calculating and estimating a succession of time, which will arise from necessity, and a concourse of ideas resulting from observation. Thus days are formed from the sun's apparent revolution; months by those of the moon, compared with the sun; and years by the succession of the same seasons, length of days, &c.

Eras were first adopted from necessity and observation; and in proportion to the accuracy of the latter, these epochas are more or less true in different countries.

In this country, and the greatest part of Europe also, the measures of time are very exactly known. The most useful epocha is that of the birth of our Saviour, from which we now reckon both backwards and forwards, i. e. such an event happened so many years before the birth of Christ, or so many after. To this all former accounts of time have been long reduced in this kingdom, and arranged into tables, to assist the memory, known by the name of Chronological Tables.

For the accommodation of our readers, we shall subjoin a select and interesting set of these Tables, commencing from the Invasion of Britain by Julius Cæsar, at which period only the regular authentic history of this country is to be dated.

Chronological or General Tables of Historical Events, according to their proper Time and Period, collected from the best Authorities.

	Years before Christ.
Invasion of England by Julius Cæsar	52
The Britons, its inhabitants, were a branch of the ancient Gauls, or Cnltæ; of which the Belgæ possessed the western part, the Brigantes had the northern, the Iceni dwelt in Norfolk and Suffolk, and the Silures inhabited South Wales.	
Dover Castle built by Julius Cæsar	50
Gloucester built by Arviragus, a Roman general	47
Cæsar introduced the solar or Julian year	45
Coin first used in Britain	25
Our Saviour JESUS CHRIST, born on Monday, Dec. 25, four years before the common era	5

HISTORY.

Year of our Lord.

Of the Julian period 4714; of Rome 754 - - - - - - - 1
Our Saviour JESUS CHRIST crucified on Friday, April 3d, at three o'clock, P. M. His Resurrection, on Sunday, April 5th. His Ascension, on Thursday, May 14th - - - - - - 33
Claudius Cæsar makes an expedition into Britain - - - - - 43
The city of London fortified by the Romans - - - - - - 49
The Iceni, &c. reduce London to ashes, and massacre 70,000 Romans—Queen Boadicea is defeated by the Romans, and 80,000 Britons slain - - - - - - - - - - - - - 61
Anglesea Isle subdued by the Romans - - - - - - - - - 78
Julius Agricola, the Roman General, builds a rampart with a chain of castles from the Forth to the Clyde - - - - - 85
The river Medway overflowed the country - - - - - - - 87
Britain first discovered to be an island - - - - - - - - 90
River Humber overflowed, and deluged a country of fifty miles 95
Luthgacus, the 22d king of Scotland, a tyrant, put to death by his nobles - - - - - - - - - - - - - - - - - 110
Adrian, the Roman emperor, visits Britain, and builds a wall from Newcastle to Carlisle - - - - - - - - - - - 121
Hygenus, bishop of Rome, first takes the title of Pope - - - 154
The Britons revolt from the Roman government - - - - - 162
Lucius, king of Britain, sends to pope Eleutherus for some Christian preachers - - - - - - - - - - - - - - 178
London was the seat of an archbishop - - - - - - - - - 185
Confirmation first took place - - - - - - - - - - - - 190
Scotland first received the Christian faith—Severus's wall built from sea to sea - - - - - - - - - - - - - - - 209
The Septuagint, or Greek Bible, found in a cask - - - - - 217
The Vulgate edition of the Bible discovered - - - - - - 218
A frost in Britain which held five months - - - - - - - 220
Gold and silver coin used in Scotland - - - - - - - - - 233
A storm in Canterbury, which threw down 200 houses, and killed many families - - - - - - - - - - - - - - 234
The sea swallowed up many thousand acres of land in Lincolnshire - - - - - - - - - - - - - - - - - - - 245
The river Thames frozen nine weeks - - - - - - - - - 250
A famine in Britain, so that persons ate the bark of trees - - 272
The city of London was walled, and a palace built - - - - 294
Mechanical arts exceeded in Britain those of Gaul - - - - 298
Constantius died at York, and was succeeded by his son, the great Constantine—London wall built—a famine in Scotland, when thousands were starved - - - - - - - - - 306
40,000 persons perished by famine in England and Wales - - 310
Surplices first used in churches - - - - - - - - - - 316
The Nicene Creed was framed in - - - - - - - - - - 325
An irruption of the sea in Lancashire - - - - - - - - - 330
Saddles were first used—the Creed called the Athanasian now wrote - - - - - - - - - - - - - - - - - - - 340
420 houses blown down in Carlisle, and many killed - - - - 349
5000 persons lost in Cheshire, by an irruption of the sea - - 353

Year of our Lord.

A severe frost in Scotland for 14 weeks - - - - - - - - - 359
Bishops appointed by the people—the invention of bells - - 400
The patronage of churches began - - - - - - - - - - 402
Constantine, a British prince, was elected the first British king after Lucius - - - - - - - - - - - - - - - - - 410
Roman highways were made in Britain - - - - - - - - - 415
Colchester destroyed by a storm, and many people killed - - 416
St. Patrick preached the gospel in Ireland - - - - - - - 432
The season of Advent was first observed - - - - - - - - 433
Hengist's treacherous massacre of 300 English nobles, at an entertainment at Stonehenge - - - - - - - - - - - 476
Constantine, king of Scotland, slain by a nobleman, for ravishing his daughter - - - - - - - - - - - - - - - 479
Prince Arthur begins his reign over the Britons - - - - - 508
Round Table order of knighthood began - - - - - - - - 519
Swearing on the Gospels first used - - - - - - - - - - 528
University of Cambridge first chartered - - - - - - - - 531
Morietic, king of Ireland, drowned in a hogshead of wine - - 534
The kingdom of Northumberland began - - - - - - - - - 547
Crosses first set upon steeples - - - - - - - - - - - 568
The Mercian kingdom began - - - - - - - - - - - - 582
The invention of anchors - - - - - - - - - - - - - 587
The laws of the land translated into Saxon - - - - - - - 590
The first Christian burial-place in Britain—Canterbury made the metropolitan archbishopric, by St. Augustin - - - - - - 596
Feodal or Feudal System introduced by the Saxons - - - 600
The first establishment of the court of chancery - - - - - 605
Laws published in the Saxon tongue—St. Paul's, in London, built - 610
Westminster Abbey built - - - - - - - - - - - - - 614
Mahomet the false prophet flies from Mecea to Medina - - 622
The first stone church built at Lincoln—York cathedral built 628
Parishes in England first laid out, being 45,000, afterwards reduced to 8700 - - - - - - - - - - - - - - - - 640
London first made a bishopric - - - - - - - - - - - - 653
Building with stone brought into England by Bennet, a monk - 670
Glass brought into England by Benedict, a monk - - - - - 674
Rochester burnt by Ethelred, king of Mercia - - - - - - 677
The Thames frozen for six weeks, so as to build booths upon it 695
A storm at Lincoln which threw down above 100 houses - - 701
Silver plate first used by Welford, bishop of Northumberland - 709
Ina, king of Wessex, regulated ale and alehouses - - - - - 728
A famine all over England, Wales, and Scotland - - - - - 739
Church-yards first admitted into cities - - - - - - - - 740
Six hundred cities destroyed by earthquakes - - - - - - 742
The Creed, Lord's Prayer, &c. translated into Saxon—Scriptures ordered to be read in British monasteries - - - - - 746
A dreadful pestilence over Europe and Asia - - - - - - 747
Organs first brought to Europe, and used in churches - - - 751
Burials first allowed in church-yards - - - - - - - - - 758

Year of our Lord.

A plague in England - - - - - - - - - - - - - - - 762
The plague at Chichester, of which 34,000 died - - - - - - 771
Pleading introduced into English courts of judicature - - - 786
Plague in the city of Canterbury - - - - - - - - - - 788
The custom of pledging in drinking began - - - - - - - - 789
Trumpets first sounded before English kings - - - - - - - 790
A famine in Wales and Scotland - - - - - - - - - - 792
The Danes first visited the coasts of Scotland and Ireland - - 795
The Norman invasions now commenced - - - - - - - - 800
The Danes first landed in Ireland, and destroyed Roscommon - 807
Order of St. Andrew in Scotland instituted - - - - - - - 809
Title of king of England first used - - - - - - - - - - 820
Egbert, by an edict, orders all the south part of the island to be called England - - - - - - - - - - - - - - - 827
The Flemings trade to Scotland for fish - - - - - - - - 836
Orkney Isles sold by Denmark to Scotland - - - - - - - 839
The Danes landed at the mouth of the Thames, and took Canterbury and London—and Dublin in Ireland - - - - - - 851
Alfred recovers England from the Danes - - - - - - - - 880
Aldermen first appointed - - - - - - - - - - - - - 882
Alfred repairs the city of London - - - - - - - - - - 885
Alfred divides England into counties and hundreds, appoints fairs and markets, and founds Oxford University—The first brick buildings in England - - - - - - - - - - - - 896
Knighthood first used in England - - - - - - - - - - 897
Doomsday-book began—Cambridge University founded - - - 915
A storm which destroyed above 40 houses in Cambridge - - 919
The river Thames frozen for 13 weeks - - - - - - - - 923
Coroners became officers of the realm - - - - - - - - 925
Constantine III. king of Scotland, resigned his crown, and became a monk - - - - - - - - - - - - - - - 933
Ireland over-run by the Danes - - - - - - - - - - - 942
A storm in London, which threw down 1500 houses - - - - 944
Theft made punishable with death - - - - - - - - - - 946
The Danes are overcome in battle by the Irish - - - - - - 947
Southampton nearly destroyed in a storm by lightning - - - 951
A plague in Scotland, which destroyed 40,000 persons - - - 954
The first tunable set of bells hung up at Croyland Abbey - - 960
St. Paul's, London, burned - - - - - - - - - - - - 964
Bells first consecrated - - - - - - - - - - - - - - 968
Division of Wales into North, South, and Powis Land - - - 970
Tribute of wolves' heads paid to England by the Welsh - - 971
Juries first instituted, and customs first collected - - - - - 979
Stone buildings introduced into England - - - - - - - - 980
Great part of London destroyed by fire - - - - - - - - 982
England invaded by the Welsh - - - - - - - - - - - 984
Arithmetic brought into Europe from Arabia - - - - - - - 991
Scarlet Dye invented—Paper of cotton rags used - - - - - 1000
A general massacre of the Danes in England, on Sunday, Nov. 13, 1002
Norwich destroyed by Swain of Denmark - - - - - - - - 1004

Year of our Lord.

All the old churches rebuilt—A famine in England - - - - 1005
The Danes subdue great part of England - - - - - - - 1008
Canterbury Cathedral burnt by the Danes, and nine-tenths of the inhabitants destroyed - - - - - - - - - - - 1011
Children forbidden by law to be sold in England - - - - 1015
London bridge built of wood - - - - - - - - - - - 1016
Canute is fully established king of England - - - - - - 1017
Annual amount of the land-tax in England, 82,000l. - - - 1018
The Danes settled in Scotland - - - - - - - - - - - 1020
William Duke of Normandy born - - - - - - - - - - 1027
Scotland divided into baronies - - - - - - - - - - 1032
Duncan, king of Scotland, killed by the usurper Macbeth - 1039
The first sermon preached at the coronation of Edward the Confessor - - - - - - - - - - - - - - - - - 1041
A famine in Scotland, which continued for two years - - - 1047
An earthquake at Worcester and Derby - - - - - - - - 1048
Broad Seal of England first used - - - - - - - - - - 1050
William, duke of Normandy, visited king Edward - - - - 1051
The Court of Hustings granted to the city of London - - - 1052
Nearly 400 houses in London blown down by a storm - - - 1055
Malcolm III. king of Scotland, killed the tyrant and usurper Macbeth - - - - - - - - - - - - - - - - - 1057
King Edward the Confessor, the first who touched for the king's evil - - - - - - - - - - - - - - - - - - 1058
French language and customs first used in England - - - - 1060
The river Thames frozen 14 weeks - - - - - - - - - 1063
Laws of Edward the Confessor composed—Sealing deeds and charters first in England—and Westminster abbey rebuilt 1065
The conquest of England by William, duke of Normandy, in the battle of Hastings, October 14, - - - - - - - - 1066
The Cinque Ports first appointed—The city of Exeter refused allegiance, but compelled to submit - - - - - - - - 1067
England divided into baronies—Curfew bell established - - 1068
Musical notes invented—feudal law introduced - - - - - 1070
The bishops made barons—Vice of swearing introduced - - 1072
The first beheading of aldermen in England - - - - - - - 1074
First archdeacon in England—Precedency of bishops settled 1075
Justices of peace first appointed in England—Bishoprics removed from villages to great towns - - - - - - - - 1076
London much damaged by fire - - - - - - - - - - 1077
Tower of London built - - - - - - - - - - - - - 1078
Court of Exchequer instituted, and sheriffs appointed first—The Jews first arrived in England—The New Forest in Hampshire began to be made - - - - - - - - - - - - 1079
Doomsday-book, or a survey of England, began - - - - - 1080
The first English stone bridge at Bow, near Stratford—Gold first coined in England—A famine in England—and a fire in London - - - - - - - - - - - - - - - - - 1087
Robert, duke of Normandy, conspires against England—The Danes from Dublin burnt Waterford in Ireland - - - - 1088

Year of our Lord.

An Earthquake in England followed by scarcity—The Norman rebellion extinguished—Corporations began in England—London not then paved—Feudal system introduced into Scotland - - - - - - - - - - - - - - - - - 1090
A violent storm in England, 500 houses thrown down, and Bow Church in London unroofed—The church steeple and many houses thrown down at Old Sarum—and Winchelscomb church steeple, in Gloucestershire, thrown down - - - - - - - - - - - - - - - - - - - 1091
The Welsh rebel, and defeat the Normans and English - - 1095
The first crusade, or holy war, began - - - - - - - - - 1096
Tower of London walled in—Curfew bell abolished, after 32 years—Taxes raised arbitrarily—Coats of arms and heraldry introduced—Goodwin Sands first formed, the sea overflowing 4000 acres—Privilege of making wills granted - 1100
Silver coin first made round—The measure of an ell or yard fixed by Henry I.'s arm - - - - - - - - - - - - - 1101
Gloucester abbey, and the city of Winchester, burned—Surnames began to be used in England - - - - - - - - - 1102
The first king's speech delivered by Henry I. - - - - - - 1107
Land-tax of England three shillings per hide - - - - - - 1109
Cambridge University revived - - - - - - - - - - - 1110
A great mortality among men and cattle - - - - - - - - 1111
Several bridges, at that time of timber, destroyed by frost - 1114
St. Stephen's chapel, now the House of Commons, built - - 1115
Parliaments first met - - - - - - - - - - - - - - - - 1116
Order of Knights Templars established - - - - - - - - - 1118
Henry I.'s eldest son, and two other children, with 180 nobility, shipwrecked and lost in coming from Normandy - 1120
Woodstock park the first in England - - - - - - - - - 1123
Churchwardens and overseers instituted - - - - - - - - 1127
A fire in London—Concubines allowed to the priests - - - 1132
Danegelt, or land-tax, abolished by Stephen—A fire in London—London bridge built—York city, its cathedral, and 39 churches, burnt - - - - - - - - - - - - - - - 1137
Appeals to the Pope first made from England - - - - - - 1138
The Guelphs and Gibelines began—An eclipse, March 21, which brought on total darkness—Canon law first introduced into England - - - - - - - - - - - - - - - - 1140
Brittany annexed to the crown of France - - - - - - - 1150
Eleven hundred castles demolished in England - - - - - - 1153
Scutage, the first tax in England levied to pay an army - - 1159
Bills of Exchange first mentioned—30 German heretics in England famished to death - - - - - - - - - - - - 1160
London bridge rebuilt with timber - - - - - - - - - - 1163
Herring-fishing first practised - - - - - - - - - - - 1164
Four knights massacre Thomas a Becket—Preston guild established - - - - - - - - - - - - - - - - - - - 1171
Henry II. arrived from Normandy, and did penance at Becket's tomb - - - - - - - - - - - - - - - - - - 1174

Year of our Lord.

England divided into circuits, and itinerant judges appointed - 1176
A fat ox sold for 12d. a sheep for 4d. provender for 20 horses 4d. and bread for 100 men 12d. - - - - - - - - - 1177
York city again burnt by the Danes - - - - - - - - - 1179
Glass windows used in private houses in England - - - - 1180
Justices in eyre, or of the forests, appointed - - - - - - 1184
The Knights Templars founded the temple, London - - - 1185
The great conjunction of the sun and moon, and all the planets, in the sign Libra - - - - - - - - - - - - 1186
St. Paul's church built on stone arches, hitherto unknown - - 1187
Henry II. died with grief at the altar, cursing his sons—Jews massacred at the coronation of Richard I.—500 perished at York—Sheriffs in London first appointed - - - - - 1189
Coarse woollen cloth introduced into England—An eclipse, when the stars appeared at ten in the morning, June 22 - 1191
Houses in London ordered (to prevent fire) to be of stone, and covered with slates - - - - - - - - - - - - 1192
Richard I. ransomed for 150,000 marks, or 100,000l. of our money—A great dearth in England and France, followed by a pestilence which held three years, when wheat sold for 20s. per quarter, equal to 6l. now - - - - - - - - 1193
Dieu et mon Droit, first used on King Richard's victory over the French - - - - - - - - - - - - - - - - - 1194
Interest first mentioned, as legal, at 10 per cent - - - - 1199
Chimnies first introduced into buildings—Surnames now became common in England - - - - - - - - - - - - 1200
Cities first incorporated - - - - - - - - - - - - - 1201
Assize of bread first appointed - - - - - - - - - - - 1202
The first regular parliament was held - - - - - - - - - 1203
Barons first summoned to parliament—A hail-storm as large as hen eggs, which destroyed the corn, demolished many houses, and many perished - - - - - - - - - - - - 1205
Bishops banished from England by king John - - - - - 1208
Bull-baiting first practised at Stamford, in Lincolnshire—London bridge (of stone) finished after 33 years - - - - 1209
Banns for marriage ordered to be made public - - - - - 1210
Fire on London bridge destroyed 2000 persons - - - - - 1212
Magna Charta signed by king John and the barons at Runneymead, June15—Court of Common Pleas established - - - 1215
Wheat sold at 12d. per quarter, beans and oats at 4d. - - 1216
Salisbury cathedral built - - - - - - - - - - - - 1220
The pope first collected tenths of church livings in England—The pope is refused an annual sum from its cathedrals and monasteries—Marriages first celebrated in churches - - - - - - - - - - - - - - - - - - 1226
A conspiracy against Henry for cancelling Magna Charta - 1227
Thunder 15 days, with violent tempests of rain—Houses of London and other cities still thatched with straw - - - 1233
Straw used for the king's bed—Coals discovered near Newcastle—Cider, called wine, made in England - - - - 1234

Year of our Lord.

Thames flowed so high, that the lawyers were brought out of Westminster Hall in boats - - - - - - - - - - - - 1235
Leaden pipes for conveying water invented - - - - - - - 1236
Water began to be conveyed to London in leaden pipes - - 1237
The first punishment of hanging, drawing, and quartering—Tin only known in Devon and Cornwall - - - - - - - 1241
King Henry III. pledged his crown and jewels on his daughter's marriage—Aldermen of London first appointed - - - - - - - - - - - - - - - - - - - 1242
The chancellor's court established at Oxford - - - - - - - 1244
Savoy Palace, Strand, London, built - - - - - - - - - - 1245
Tiles first used in England—Houses in London still thatched with straw—Cheapside then lay out of the city - - - - - 1246
Roger Bacon invented the magic lantern - - - - - - - - - 1252
Linen first made in England—Bible divided into chapters - - 1253
Eighteen Jews hanged, and about 200 heavily fined, for mal-practices at Lincoln—Tapestry introduced by Sir F. Crane 1255
Standard weights and measures fixed—Gold first coined - - 1257
Counties first authorised to send members to parliament - - 1258
Roger Bacon invented magnifying glasses - - - - - - - - 1260
Seven hundred Jews slain in London, for demanding more than 2d. per week interest on 20s.—13 rioters hanged of the goldsmiths' and taylors' companies - - - - - - - - - 1262
The commons of England first summoned to parliament - - 1264
Cities and boroughs first represented in parliament—Assize of bread and ale first established - - - - - - - - - - 1266
Jews forbid from enjoying freeholds by act of parliament—The Hamburgh Company incorporated in England - - - 1269
The cathedral and monastery of Norwich burnt, and the rioters executed in the king's presence - - - - - - - - 1271
The first treaty with foreign nations - - - - - - - - - - 1272
The first coronation feast in England—Gilding with leaf gold invented - 1273
Jew money-lenders obliged to wear a plate on their breast—Customs on exports and imports first granted by parliament - 1274
Usury of Jews restrained by parliament - - - - - - - - 1275
Statute of bigamy passed - - - - - - - - - - - - - - 1276
267 Jews hanged and quartered for clipping the coin - - - 1277
Entailing estates introduced—Ravishing women made a capital offence - - - - - - - - - - - - - - - - - - - 1279
More than 300 houses destroyed by the sea at Winchelsea—Saddlers' company incorporated—Charter to Newcastle for digging and using coals - - - - - - - - - - - - - - 1280
Margaret, daughter of the king of Scotland, married to the king of Norway - - - - - - - - - - - - - - - - - 1281
50 Jews suffered at Northampton for mal-practices, and their synagogues were destroyed - - - - - - - - - - - - 1282
Edward I.'s queen brought to bed at Carnarvon of a son, the first prince of Wales - - - - - - - - - - - - - - 1284

Year of our Lord.

Water brought to London, and Cheapside conduit erected—Fencing schools prohibited in London, as productive of duels—Westminster Abbey rebuilt - - - - - - - - - 1285
Title of Prince of Wales first conferred—Silk mantles first worn by ladies at Kennelworth castle ball - - - - - - 1286
All the Jews in England seized in one day—15,660 banished, and their property confiscated - - - - - - - - - - 1287
Candles of tallow first began to be used - - - - - - - - 1290
Barristers first appointed - - - - - - - - - - - - - - 1291
Regular parliaments commenced - - - - - - - - - - - 1293
Silver mines discovered in Devonshire - - - - - - - - - 1294
Edinburgh taken - - - - - - - - - - - - - - - - - - 1296
Statute relating to taxes and money-bills—The first admiral in England - - - - - - - - - - - - - - - - - 1297
The present Turkish empire begins—Splinters of wood used for lights—Wine used in England only as a cordial - - - 1298
Windmills invented—A goose sold for 4d. a lamb at Christmas for 6d. at other times 4d. and two pullets for five farthings - 1299
Standard for gold and silver fixed by law—Chimnies only in kitchens or large halls—Legal interest 20 per cent.—Silver knives and forks, spoons, &c. a very great luxury—Houses in London all built with wood - - - - - - - - - - 1300
The mariner's compass invented - - - - - - - - - - - 1302
Coals imported in a quantity from Newcastle to London - - 1305
Another statute passed for entailing estates—Interest of money 45 per cent - - - - - - - - - - - - - - - - 1307
A public weighing engine set up in London - - - - - - - 1309
Lincoln's Inn Society established as an inn of court, heretofore the bishop of Chichester's palace - - - - - - - - - 1310
The knights templars abolished - - - - - - - - - - - 1311
The greatest earthquake known in England—A famine - - 1318
Battle of Boroughbridge, Yorkshire - - - - - - - - - 1322
Pardons at Coronations first granted in England - - - - - 1327
Seventy families of woollen manufacturers invited into England from the Netherlands - - - - - - - - - - - - 1330
Two Brabant weavers settled at York—The first woollen cloth made in England - - - - - - - - - - - - - - 1331
Title of Duke first given in England to Richard, son of Edward the Black Prince - - - - - - - - - - - - - - 1337
Sea-fight with the French, 400 sail taken, and 30,000 men—Parliament granted 30,000 sacks of wool to the king—Speaker of the House of Commons first chose—Blankets first made in England—Herald's college instituted—King of England assumed the title of king of France—Inner, Middle, and Outer Temple Societies—Edward III. invaded France, and pawned his crown and jewels for 50,000 florins—Order of the Garter instituted - - - - - - 1339
Gunpowder and guns first invented by Swarts, a monk - - - 1340
Edward III. made the distinction of Lords and Commons - - 1342

Year of our Lord.

Titles first granted by patent—Statute of premunire passed, to exclude foreigners from ecclesiastical livings—Knighthood of the Round Table revived—Edward the Black Prince created Prince of Wales - - - - - - - - - 1344
The second time of coining gold in England—First mention of apothecaries in history—Esquire first used by persons of fortune, not attending knights - - - - - - - - - 1345
Battle of Cressy, where great guns were first used - - - - 1846
Dearth and famine in England—Plague, of which 50,000 died in London, 1500 in Leicester, &c. - - - - - - - - - 1347
Rain, without one dry day or night from Midsummer to Christmas - - - - - - - - - - - - - - - - - - 1348
Order of the Garter, or St. George, began in England - - - 1349
Toll-gates or Turnpikes first in England—Brewers, dyers, &c. began to use sea-coal for fire - - - - - - - - - 1350
Groats and half-groats the largest English silver coin - - - 1351
The Turks first enter Europe - - - - - - - - - - 1352
The Strand in London first built on—A famine and dearth in England and France, called the Dear Summer - - - - 1353
Pressing Seamen first began—Harlots and prostitutes obliged to wear a striped dress - - - - - - - - - - - 1355
Court of Admiralty erected—Herring statute passed - - - 1357
Edward III. quartered the arms of France with England - - 1358
Storm of lightning, &c. which killed vast numbers of horses and 1000 troops of king Edward III. near Chartres - - - 1359
Pleadings in English changed from French—A very dreadful plague in London - - - - - - - - - - - - - 1362
Lord mayor of London entertains four kings at his table, England, France, Scotland, and Cyprus—John, king of France, died a prisoner in England - - - - - - - - - - 1364
Three clockmakers came from Delft first into England, and set up a striking clock in Westminster - - - - - - - - 1368
Order of Golden Shield and Thistle began—Robert Stewart the 100dth king of Scotland, and first of the name of Stewart, crowned at Scoon - - - - - - - - - - - 1370
Duchy Court of Lancaster established - - - - - - - - 1376
Plymouth, Portsmouth, Hastings, and Rye, burnt, and Isle of Wight taken by the French—Coronation oath now first introduced—Population of England was 2,092,978 souls - - 1377
Plays first performed in England - - - - - - - - - - 1378
A Plague in England - - - - - - - - - - - - - - 1379
Bills of Exchange the only legal mode of sending money from England - - - - - - - - - - - - - - - - - 1381
Linen Shirts began to be worn—Linen weavers from the Netherlands established in London - - - - - - - - - 1386
The first high-admiral in England - - - - - - - - - - 1387
Duke of Gloucester and other lords rebel—English barons first created—The Lord Chief Justice of England executed for favouring Despotism—Side-saddles first used in England—Bishops deprived of being judges in capital offences - 1388

Year of our Lord.

A sea fight, wherein 80 French ships were taken by the English—Saffron first brought to England by a Pilgrim—Wine sold at 20s. a ton, the second sort at 13s. 4d.—A famine in England—A remarkable storm on the queen's landing - - - - - - - - - - - - - - - - - - 1389

Herring-pickling first invented—Plays performed by parish clerks - - - - - - - - - - - - - - - - - - - 1390

Brest given up by the English—Cards invented in France for the king's amusement - - - - - - - - - - - - - - 1391

Scotch gold and silver prohibited in England - - - - - - 1393

King Richard II. taken prisoner by Henry duke of Lancaster, who caused him to be assassinated in Pontefract castle—Henry crowned king of England, as Henry IV. and the order of the Bath instituted—Roger, earl of Marshe, and viceroy of Ireland, slain—Copper money used only in Scotland and Ireland - - - - - - - - - - - - - - - - 1399

Duke of Exeter's conspiracy against king Henry discovered—Rebellion of the English and Welsh, and war with Scotland—Sea-coal in general use in London - - - - - - - - 1400

Welshmen forbid purchasing lands in England - - - - - - 1401

Battle of Nesbit, when 10,000 Scots were slain—Decimal Arithmetic invented - - - - - - - - - - - - - - - 1402

Isle of Man first governed by the earl of Northumberland - 1403

Thirty-one French ships taken or destroyed near Milford Haven—A Bishop first put to death by the civil power - - 1405

Earl of Northumberland attainted, and the Isle of Man government given to Sir John Stanley - - - - - - - - - - 1406

Thirty thousand persons died of the plague in London - - 1407

Guildhall in London built - - - - - - - - - - - - - - 1410

Judge Gascoigne committed the prince of Wales to prison for assaulting him on the bench - - - - - - - - - - - - 1412

Henry V. claimed the crown of France - - - - - - - - 1414

Henry V. pledged the Regalia for 20,000l. to push his conquests—Emperor Sigismond installed in England a Knight of the Garter—England invaded by the French - - - - - 1416

Paper made of linen rags now used—Henry V. invaded Normandy with 26,000 men - - - - - - - - - - - - - 1417

Gunpowder first made in England - - - - - - - - - - - 1418

Peace made with France—Garter king at arms first appointed in England - - - - - - - - - - - - - - - - - - 1420

First commission of array to raise a militia—Duke of Bedford began his protectorate—King Henry died of a pleurisy at Vincennes - - - - - - - - - - - - - - - - - 1422

Irishmen all ordered out of England - - - - - - - - - - 1423

Freemasons forbid in England—Prohibition of exporting sheep - 1424

Scotland receives the Orkney and Shetland Isles from Denmark - 1426

Parliament receives petitions against the use of hops - - - 1428

Battles of Herrings and Patay, under Joan of Arc - - - - - 1429

Year of our Lord.

A national debt was first contracted—Foreigners allowed to have one-half foreigners on juries, but not allowed to hold church benefices—Distinction of Gentlemen first in use - 1430
First Lord Mayor who went by water, sworn at Westminster - 1433
Duke of Bedford's protectorate ended with his death - - - 1435
A stair-case fell at Bedford assizes, when 18 persons were killed—Dearth and famine in England, bread made in many places of fern roots and ivy berries - - - - - - - - 1438
The first Viscount in England - - - - - - - - - - - - 1439
St. Paul's steeple, London, fired, and that of Waltham Cross consumed by lightning - - - - - - - - - - - - - 1443
The sea breaks in at Dort, and drowns 100,000 persons, April 17, - - - - - - - - - - - - - - - - - - 1446
French fleet defeated and taken off Sandwich - - - - - 1449
The Lord Mayor's show, London, instituted—Guianne, or Gascony, totally lost to England—Constantinople taken by the Turks, May 29, - - - - - - - - - - - - - 1453
Attornies in Norwich, Norfolk, and Suffolk, reduced from 80 to 14—Wheat 1s. per quarter, and malt 16d. - - - - - 1454
Pawnbrokers first began - - - - - - - - - - - - - 1457
Wood-cuts and engraving on copper invented - - - - - 1460
The first book printed, which was the vulgate bible, 2 vols. - 1462
Henry VI. taken prisoner in Lancashire - - - - - - - 1463
Dress restrained by law - - - - - - - - - - - - - 1465
First idea of electricity given by two globes of brimstone—Long-toed shoes forbid under heavy penalties - - - - 1467
William Caxton, a mercer, introduced printing—Great mortality at Oxford—Chester nearly destroyed by fire - - - 1471
Violins invented—Aberdeen university founded—A plague which destroyed more than 15 years' war - - - - - - 1477
Duke of Clarence drowned in a butt of Malmsey - - - - - 1478
Sweating sickness first observed in England, which carried off great numbers - - - - - - - - - - - - - - 1481
Population of England was now 4,688,000—Post-horses and stages established—Statutes first printed - - - - - - 1483
Sheriff fined 50l. for kneeling too near the Lord Mayor at St. Paul's - - - - - - - - - - - - - - - - - 1486
Artichokes first planted in England—The first Poet Laureat - 1587
Columbus brought maps and sea-charts to England - - - 1489
Greek language first introduced into England—wheat 20d. per bushel - - - - - - - - - - - - - - - - - - 1491
Wormwood, &c. used before hops, to preserve malt liquor—War with France—Columbus first discovers America - - 1492
Columbus discovers Montserrat in the West Indies—Wheat sold in London at 4s. per quarter - - - - - - - - - 1493
Algebra first known in Europe—Printing carried on in Westminster Abbey till now - - - - - - - - - - - - 1494
Feodel or Feudal Laws restored by Henry VII. and limited - 1495
Beggars relieved by law—Game act passed - - - - - - 1496
The Portuguese first sail to the E. Indies, Vasques di Gama - 1497

Year of our Lord.

South America discovered by Vesputius Americanus—North America discovered by Sebastian Cabot and his son—John Cabot settled Newfoundland, the first English colony in America - - - - - - - - - - - - - - - - - - 1498
Thirty thousand died of the plague in London - - - - - - 1499
Virtues of Jesuits Bark discovered - - - - - - - - - - 1500
Lord Mayor's feast instituted—Merchant Taylors, first so named 1501
Henry VII.'s son died—His chapel, Westminster, built—St. Helena discovered - - - - - - - - - - - - - - - - 1502
Slave trade first commenced - - - - - - - - - - - - 1503
Shillings first coined in England—Distaff spinning first in England - - - - - - - - - - - - - - - - - - - 1505
Henry VII. built the first double-decked ship in England, of 1000 tons—Vegetables and gardening imported from the Netherlands - - - - - - - - - - - - - - - - - 1509
Hats first made in London - - - - - - - - - - - - - 1510
War with France—Pensions first granted—20l. given to a lady of the court for services done—First Royal Navy of England—Mercury discovered to be anti-venereal - - - 1512
Benefit of clergy taken from murderers - - - - - - - - 1513
Camera Obscura invented—Christ Church College, Oxford, began - 1515
Luther begun the Reformation—Insurrection of the London apprentices—Courts of Conscience in London - - - - 1517
Physicians' College incorporated - - - - - - - - - - 1518
First Geographical Map of England—Henry VIII. had the title of Defender of the Faith, for his writings in favour of popery - 1520
Inclosures in England restrained—English ships find Whalebone at Cape Breton - - - - - - - - - - - - - - - 1521
New Survey of England made, the first since doomsday-book—Roses first planted in England - - - - - - - - - - 1522
Beer first introduced into England—Soap first made at Bristol 1524
Carp first brought to England—Damask-roses and pippins brought to England—Hops first used in England in malt liquors—The first voyage round the world—Town of Dover fortified—Anabaptists began - - - - - - - - - - - 1525
Secretaries of State first appointed—Lord Cromwell made so—The name of Protestants begins from the diet of Spires - 1529
Sir Thomas Moore, the first Chancellor qualified by education—Parochial registers first appointed—St. James's Palace built - 1530
Registers of births, marriages, &c. began—Scenes first introduced into Theatres—Henry VIII. divorced queen Catherine, and married Ann Bulleyne - - - - - - - - - 1533
Arable lands restrained, and pasture enforced—Silk first worn by the English clergy - - - - - - - - - - - - - - - 1534
10,000 Friars and Nuns turned out of English monasteries—Brass great guns first made in England—Henry VIII. excommunicated by the pope - - - - - - - - - - - - 1535

Year of our Lord.

Court of Augmentation established—Rebellion in England, on suppressing the monasteries—Popery abolished in England by law—A gentleman pensioned with ten marks—Translation of the Bible, by order of the king—Six Articles of Religion published—Wales united to England by parliament—Queen Catherine died, and Queen Anne was put to death, when king Henry VIII. married lady Jane Seymour - - - - - - - - - - - - - - - - - - - 1536

Queen lady Jane Seymour died in child-bed - - - - - - - 1537

Variations of the seaman's compass observed—Registers parochial instituted by Lord Cromwell - - - - - - - - 1538

Pipes of lead invented for conveying water—Cannon began to be used in ships - - - - - - - - - - - - - - - 1539

Dissolved Abbeys, &c. valued at 2,853,000l.—Hampton Court Palace clock, the first tolerable going clock in England—Apricots first planted in England—A Cherry-Orchard in Kent, of 32 acres, produced in one year 1000l.—Quicksilver used to refine silver ore—Order of the Thistle instituted - - - - - - - - - - - - - - - - 1540

Navigation Act again passed—The word Pope struck out of all English books - - - - - - - - - - - - - - - - 1541

Fishing towns legally regulated - - - - - - - - - - - - 1542

Pins brought from France—Mortars for bombs used in England—Bankrupts first regulated by law - - - - - - - 1543

Iron first cast in Sussex—Pistols first used by the horse—Edinburgh burnt—Good land let in England at 1s. per acre - 1544

Needles first made in England by a native of India, which art died with him—Port-holes in ships of war introduced - 1545

Public stews suppressed - - - - - - - - - - - - - - 1546

Statute relating to slaves and servants—Iron great guns made—Henry VIII. died, and the duke of Somerset protector for the young king - - - - - - - - - - - - - - - - 1547

Anatomy restored—Iron Bullets mentioned—Horse Guards instituted—Journals of the House of Peers first taken—Southwark annexed to London - - - - - - - - - - - 1550

Sweating sickness appeared for the last time—Crowns and half crowns first coined—The first comedy acted in England - 1551

Treason requiring two witnesses—Grapes first brought into England, and planted in Suffolk—Starching linen first introduced—42 Articles of Religion published—Translation of David's Psalms by Sternhold and Hopkins - - 1552

Taverns in London restrained to 40—A barrel of beer with the cask 6d. and four great loaves for 1d.—Mary, of bloody memory, crowned queen, October 1. - - - - - - - - 1553

Twenty marks a sufficient support for gentlemen of the law—Wheat sold at 6s. 8d. per quarter—Seven bishops deprived for being married - - - - - - - - - - - - - 1554

First law to repair highways—Inclosures restrained - - - 1555

Year of our Lord.

Slave-trade began with England—Cranmer, archbishop of Canterbury, and about 300 Protestants, burnt, and great numbers perished in prison—Bellmen first in London - - 1556

Glass bottles first made in England—Alteration in the order of the Garter - - - - - - - - - - - - - - - 1557

Calais taken from the English—Interest of money 12 per cent.—Wheat 14s. per quarter—Hailstones in Northamptonshire of 15 inches round—Queen Mary died of a dropsy, and Queen Elizabeth succeeded, who completed the Reformation - - - - - - - - - - - - - - - - 1558

Rebellion of the Roman Catholics against Elizabeth- - - - 1559

Queen Elizabeth first wore silk stockings—Wesminster Abbey first made collegiate—Temple societies founded - - 1560

Lapis-calaminaris and copper mines discovered in England - 1561

Knives first made in England—Iron-wire till now imported - 1563

Knit worsted stockings first made in England - - - - - - 1564

Study of Botany revived—Royal mines established—A great sum paid for corn imported in a dearth - - - - - - - 1565

First Physic Garden in England, by Gerard—Gilliflowers, carnations, &c. first planted here by the Flemings—Flemish weavers, dyers, &c. in England - - - - - - - - - - 1567

Husbandman's labour 4d. per day—Italian book-keeping first used in London - - - - - - - - - - - - - - - - 1568

War with Scotland—Guaging invented - - - - - - - - 1570

Law for wearing woollen caps—Harrowgate mineral spring discovered - - - - - - - - - - - - - - - - - - 1571

Fans, muffs, masks, and false hair, devised by Italian harlots, first brought from France—The great massacre of Protestants at Paris - - - - - - - - - - - - - - 1572

Turkies first came into England - - - - - - - - - - 1573

Sir Francis Drake set sail round the world—Sheriffs and 300 persons died at Oxford assizes of an infection - - - - - 1577

Tulip roots first brought into England from Vienna—Whales killed at Newfoundland for their oil only, the use of bone unknown - - - - - - - - - - - - - - - - - - 1578

The Republic of Holland begins by the union of Utrecht—Linen-staining first known in England - - - - - - - - 1579

Sir Francis Drake returns from his voyage round the world—Parochial Registers fully appointed—Coaches first used in England - - - - - - - - - - - - - - - - - - 1580

Wood first cultivated in England—The tide ebbed and flowed three times in an hour at Lyme in Dorset—Thames water first conveyed into London by the London Bridge Water-Works—Chatham Chest first established—Tobacco first brought into England - - - - - - - - - - - - - - 1583

Carthagena taken by Sir Francis Drake—Cape Breton and Virginia discovered by the English - - - - - - - - - 1584

Cavendish's first voyage round the world - - - - - - - - 1585

Duelling introduced into England—Mary, queen of Scots, beheaded at Fotheringay castle, after 18 years imprisonment - 1587

Year of our Lord.

Sir Francis Drake defeats the Spanish Armada in the English channel—First reference to a master in chancery—Fire-ships invented—Paper first made in England at Dartford, in Kent—Shipping of England 31,385 tons, and 15,272 mariners—Henry IV. of France passes the edict of Nantes, tolerating the Protestants - - - - - - - - - 1588

Earl of Cumberland's expedition against Spain—Stocking-weaving invented by the Rev. Mr. Lee, of Cambridge - - 1589

Chest of Chatham enforced by law—Criminals first transported—Letters in Algebra first used—Customs farmed for the last 20 years, at 20,000l. a year—Iron slitting-mill set up at Dartford - - - - - - - - - - - - - - - 1590

East Indies visited overland by some English—First patent for printing—Three ships went from England to the East Indies - 1591

Falkland Islands discovered—Customs this year amounted to 50,000l. - - - - - - - - - - - - - - - - - - - 1592

Statute mile first fixed in England - - - - - - - - - - 1593

Broken-wharf engine erected to convey water—Plague in London carried off one-fourth of its inhabitants - - - - - - 1594

Sir John Hawkins's expedition against Spanish America—Jamaica plundered—Caribbee Isles and St. Christopher's discovered—Shakespeare flourished about this time - - - 1595

Earthquake in Kent, where the hills became vallies full of water—Flour 10s. the bushel - - - - - - - - - - - 1596

Battle of Blackwater, Ireland—The first act for relieving the poor—Watches first brought into England from Germany - 1597

Sail-cloth made in England - - - - - - - - - - - - 1599

Earl of Arundel introduced brick buildings—Dedications to books introduced to get money—East India Company's first charter - 1600

Insurance of shipping, &c. secured by law—Witchcraft act passed—Men ordered by law not to ride in coaches - - - 1601

County Courts in London revived—Best beer and ale, full measures, sold for 1d. a quart—Cauliflowers first planted in England—Royal licence to Shakespeare for a theatre—Queen Elizabeth died - - - - - - - - - - - - - - 1603

Union of England and Scotland attempted—James I. first styled king of Great Britain - - - - - - - - - - - - 1604

Gunpowder plot discovered—Coaches common in London—Attraction first discovered by Kepler—Order of St. Andrew renewed in England - - - - - - - - - - - - - 1605

Oaths of allegiance first administered—Ambassadors first sent from Turkey to England - - - - - - - - - - - 1606

Insurrection of the Puritans—Increase of buildings within a mile of London forbidden—English first settled in Virginia - 1607

Asparagus first produced in England—English till now unskilled in dyeing and dipping cloth - - - - - - - - - 1608

Year of our Lord.

The Dutch paid a tribute for fishing on our coasts—Alum first brought to perfection in England—First legal copper coins introduced, and leaden tokens abolished - - - - 1609
Sir Fr. Drake brought potatoes first from America to Ireland 1610
New river brought to London - - - - - - - - - - - 1614
Judge Bennet fined for bribery in 20,000l.—Cape Horn first sailed round - - - - - - - - - - - - - - - - 1616
Sports allowed on Sundays after service—Coining with a die first invented - - - - - - - - - - - - - - - 1617
Steam-engine invented for raising water or ballast - - - - 1618
Harvey, an Englishman, confirms the circulation of the blood - 1619
Broad silk manufactory brought into England—Coining with a die used in England - - - - - - - - - - - - - 1620
The Puritans settle in N. England—Public-houses first licensed 1621
Nova Scotia settled by the Scotch - - - - - - - - - 1622
King James died of an ague, and Charles I. succeeded - - 1625
Urine ordered to be preserved for making saltpetre—Barometers invented - - - - - - - - - - - - - - - - 1626
Duty on coals laid on—War with France - - - - - - - - 1627
Canada taken by the English—Riot in London, and Dr. Lamb killed by the mob—New Holland discovered by the Dutch - - - - - - - - - - - - - - - - - - 1628
Boston in New England built—Epsom mineral spring discovered - - - - - - - - - - - - - - - - - - 1630
Neither clocks nor watches general till this time—Calico first brought from the East Indies—St. Paul's, London, burnt and rebuilt - - - - - - - - - - - - - - - - 1631
Antigua and Montserrat planted by the English—A great fire on London-bridge - - - - - - - - - - - - - - - 1632
Saw-mills first erected near London—Seldon maintained England's sovereignty over the British seas—Covent-garden Square built - - - - - - - - - - - - - - - - 1633
Ship-money exacted—Bombs and mortars invented—Sedan chairs a patent invention—Saturn's ring discovered - - - 1634
Jamaica pillaged by the English—Thomas Parr, aged 152, died in London, from change of air and diet—Number of hackney coaches restrained—Regular posts established from London to Scotland, Ireland, &c. - - - - - - - - 1635
Ballast of the river Thames monopolized by the king—Patent for English brass and copper coin—First public lecture in Arabic at Oxford - - - - - - - - - - - - - 1636
Liturgy first read in Scotland - - - - - - - - - - 1637
Judge Berkeley arrested in the Court of King's Bench, and sent to prison by the Commons—King Charles seized the merchants' money at the mint—Bank of England began—Bows and arrows and stone cannon-bullets in use—King Charles disobliges the Scots, and their army takes Newcastle—40,000 English Protestants massacred in Ireland - 1640
King Charles went to Scotland for three months—Twelve bishops protested against all laws passed without their con-

Year of our Lord.

currence- Habeas Corpus and the Bill of Rights act passed—Ship-money and Star-chamber abolished—Coffee first used in England at Baliol College, Oxford—King Charles impeaches five refractory members, which begins the civil war, on which he retires to York—Newspapers first published in England - - - - - - - - - - - 1642

Lord Falkland killed at Newbury—Beer act passed—Excise office formed—Scarlet dye first used at Bow, near Stratford 1643

A terrible fire at Oxford—Navy office founded—Post office yielded 3000l. per annum - - - - - - - - - - - 1644

Goldsmiths became the first bankers - - - - - - - - - 1645

Battle of Benburb, Ireland—Navigation Act for the Colonies—Parliament abolished the order of bishops—King Charles put himself into the hands of the Scots at Newark, who sold him for 200,000l. - - - - - - - - - - - - - 1646

Plays suppressed by Parliament—King Charles seized by Colonel Joyce, at Holmby - - - - - - - - - - - - 1647

King Charles escaped from Hampton Court to the Isle of Wight—taken and confined in Carisbrook Castle—removed to Windsor - - - - - - - - - - - - - - - - - 1648

King Charles tried, condemned, and beheaded, Jan. 30, aged 49—Oliver Cromwell goes to Ireland with his army—Battle of Rathmines in Ireland—the first insolvent act passed - - 1649

Battle of Dunbar in Scotland—Adultery and Incest made capital for the first offence, and Fornication for the second—Jesuit's Bark first brought to Europe—Bread first made with yeast in England—First English coffee-house at Oxford—Oliver Cromwell returned from Ireland - - - - 1650

Irish rebellion ended—War with the Dutch—English settled at St. Helena—Triennial parliaments began—Hailstones of seven inches round fell at Dorchester—Cromwell totally defeated the king's forces at Worcester, Sept. 3. - - - - 1651

Four sea engagements with the Dutch in the Downs—Bands first worn by clergymen - - - - - - - - - - 1652

Oliver Cromwell becomes protector—Lord Mayor and Sheriffs arrested at the suit of two pretended Sheriffs - - - 1653

Oliver Cromwell in danger of falling from a coach-box—Air-pumps invented—Post office yielded 10,000l. - - - - - 1654

The English destroy the Spanish Galleons at Cadiz—Air-guns invented—Oliver Cromwell re-admitted the Jews into England - - - - - - - - - - - - - - - - - - 1656

Oliver Cromwell refused the title of King—Blake destroyed a Spanish fleet of galleons at the Canaries - - - - - - 1657

Government's expences this year was 1,300,000l.—The English take Dunkirk from Spain, and deliver it to France—Oliver Cromwell dies, September 3, and a terrible storm all over Europe is felt the same day—Richard Cromwell succeeds as protector - - - - - - - - - - - - - - 1658

Government's expences this year was 1,200,000l.—Plays restored—Richard Cromwell's protectorate ended - - - - 1659

Year of our Lord.

The restoration of Charles II. May 22—Franking letters first claimed—Baize manufacture introduced at Colchester—Excise on malt liquor in England—Perukes introduced into England—Tea, coffee, and chocolate, first noticed in the statutes—Royal Society of London instituted—General post-office established—Nine bishops restored, and eight consecrated - - - - - - - - - - - - 1660

Queen of Bohemia visited England—Portuguese gave Bombay to the English—Conventicles punished by law—Wine licences established—Bishops regained their seats in the House of Peers - - - - - - - - - - - - 1661

Hearth or chimney money, 2s. per annum taxed—Feudal laws abolished by statute—Act of Uniformity took place—Milling coin introduced—Lacteals discovered in opening a dog—A great storm in London—Royal Society of London established - - - - - - - - - - - - - - - - 1662

Cattle prohibited importation from Ireland and Scotland—Corn and coin in bullion permitted to be exported—Fire-engines invented—Royal Society, London, incorporated—Victualling-office instituted - - - - - - - - - - - - 1663

Eighteen capital Dutch ships taken and destroyed off Harwich—Earl Sandwich took 12 men of war, and two East India ships—First Gazette published at Oxford—Prince James designed sea signals—68,000 persons died of the plague in London - - - - - - - - - - - - - - - - 1665

Sea-fight, in which the English lost 9, and the Dutch 15 ships—Dutch totally defeated, losing 24 men of war, 4 admirals, and 4000 officers and seamen—War with Denmark and France—First act for burying in woollen—Gazette first published in London—Tea introduced from Holland—The great fire of London, which destroyed 400 streets and 13,000 houses, Sept. 2—5. - - - - - - - 1666

Dutch destroy the English fleet at Chatham - - - - - - - 1667

Coventry act passed—New theatre at Oxford built - - - - - 1669

Henry Jenkins died, aged 169—Shoe-buckles first worn in England—Union of England and Scotland attempted the second time—Royal Exchange built - - - - - - - - - 1670

War with the Dutch—Five Dutch Smyrna fleet and four East India ships taken by the English—Duke of York defeats the Dutch by sea—English take Tobago—Halfpence and farthings first coined by government - - - - - 1672

Dutch thrice defeated at sea by prince Rupert—Test act passed—Guineas first coined, so called from the gold being brought from the Guinea coast - - - - - - - - - 1673

Peace with the Dutch, when they surrendered the honour of flag to England—Plate-glass first made at Lambeth - - - 1674

First stone of St. Paul's cathedral laid - - - - - - - - - 1675

Votes of the House of Commons first printed—Monument, London, finished - - - - - - - - - - - - - - - - - 1677

Unaccountable darkness at noon-day in England—Second

Year of our Lord.

Habeas Corpus act passed—War with France, followed by a general peace—Speaker refused by the king - - - - - 1679
William Penn settles in Pennsylvania - - - - - - - - - 1681
Eight Bantam ambassadors in England—Hydraulic fire-engines invented - - - - - - - - - - - - - - - - - 1682
Rye-house plot prevented by a fire at Newmarket—Penny-post set up - - - - - - - - - - - - - - - - - - 1683
Charity schools in London instituted - - - - - - - - - 1687
William, prince of Orange, landed in England with an army, when king James II. fled from his palace—Seven bishops sent to the Tower, tried, and acquitted - - - - - - - 1688
Coronation oath enacted—Toleration act passed - - - - - 1689
King William landed in Ireland—James is defeated, and the duke of Scomberg killed, at the battle of the Boyne—Isles of St. Christopher and Eustatia retaken from the French—The English and Dutch fleets defeated off Beachy Head - 1690
Conspiracy of the bishop of Ely and others to restore king James—11,000 persons died in a great mortality at York - 1691
Conspiracy of Granvil, &c. to assassinate king William - - 1692
Bayonets first invented in England—Bank of England established—First public lottery this year - - - - - - - - 1693
Stamp duties first began—Bill for triennial parliaments passed 1694
Bachelors and widows taxed—also Births, burials, and marriages - - - - - - - - - - - - - - - - - - - 1695
Window-tax established—Edystone light-house first built - - 1696
Whitehall totally consumed by fire - - - - - - - - - - 1698
Billingsgate made a free fish-market - - - - - - - - 1699
Prussia erected into a kingdom—Abjuration oath first required—Hanover succession established by law—Society for propagation of the Gospel incorporated - - - - - - - - 1701
Quakers' affirmation first accepted as an oath - - - - - - 1702
Gibraltar taken by Sir George Rooke—French lost five men of war at Gibraltar—Court of Exchequer instituted - - - - 1704
Bills of exchange and promissory notes regulated - - - - 1705
Union between England and Scotland—Battle of Ramilies - 1706
Riots in London on Dr. Sacheverel's trial—Statute in favour of literary property - - - - - - - - - - - - - - - - 1709
Fifty new churches ordered to be built by parliament—Government take the penny post—Clarendon press printing-house, Oxford, founded - - - - - - - - - - - - - - - - 1711
Newspapers stamped—Peace of Utrecht - - - - - - - - 1713
Interest of money confirmed at five per cent.—Queen Anne died of an apoplexy—George I. elector of Hanover succeeded - - - - - - - - - - - - - - - - - - - 1714
Total eclipse of the sun, that the birds went to roost - - - 1715
River Thames dry above and below London-bridge, September 14—Several knocked down for wearing white roses, June 10—Triennial act repealed, and septennial act passed—Great frost and a fair on the Thames - - - - - - - 1716
Guineas reduced to 21s. - - - - - - - - - - - - - - - 1717

Year of our Lord

Alteration made in the Quakers' affirmation - - - - - - - 1721
Conspiracy of counsellor Layer and others—Wood's half-pence sent to Ireland—Thread first made at Paisley, in Scotland—The great duke of Marlborough died, June 22 - - - - - 1722
Black act passed—Nonjurors obliged to register their estates, and double taxed - - - - - - - - - - - - - - - 1723
Earl of Macclesfield fined 30,000l. and committed to the Tower 1725
Ward, of Hackney, expelled the House of Commons for forgery - - - - - - - - - - - - - - - - - - - 1726
Gibraltar besieged by the Spaniards—King George I. died, and king George II. succeeded—Inoculation first tried on criminals with success - - - - - - - - - - - - - - - 1727
Dublin parliament-house began, which cost 40,000l.—Frederick, prince of Wales, arrived in England - - - - - - - - - 1729
Gaol distemper fatal to the judge, sheriff, &c. at Blandford assizes - - - - - - - - - - - - - - - - - - - 1730
Spaniards besiege Gibraltar—English language to be used in all law-suits - - - - - - - - - - - - - - - - - 1731
Salt duties revived—Physic-garden at Chelsea began—Seamen's widows' corporation erected - - - - - - - - - - - - 1732
Felony to forge or counterfeit bills of exchange—Franking letters commenced - - - - - - - - - - - - - - - - 1734
Thames so high that the lawyers came out of Westminster hall in boats—7000 gin-shops in London—Turnpikes destroyed in Herefordshire—On the Essex coast several thousand sheep and black cattle drowned—Derwentwater estate given to Greenwich hospital - - - - - - - - - - - 1735
At Edinburgh the mob hanged captain Porteus - - - - - - 1736
Scarborough cliff sunk, and the spa removed—Gin act passed—Lord chancellor to license players—Radcliff's library, Oxford, began building - - - - - - - - - - - - - - 1737
Bank paid off one million capital—Westminster bridge began 1738
Mr Stephen's recipe for the stone purchased by parliament - 1739
Solar microscopes invented—Americans first use paper money 1740
Persian trade opened through Russia—Centre arch of Westminster bridge finished - - - - - - - - - - - - - - 1741
Paisley manufacture of handkerchiefs began - - - - - - - 1743
Victory man of war, of 100 guns, with admiral Balchen, &c. lost—Anson returns from his voyage - - - - - - - - - 1744
Rebellion in Scotland—Battles of Fontenoy, and Preston Pans, Sept. 21.—Marshal Bellisle brought prisoner to Windsor-castle—English take Cape Breton, Louisburg, and Nova Scotia - 1745
Last arch of Westminster bridge finished—Battle of Falkirk, Jan. 17. and Culloden, April 16. - - - - - - - - - 1746
Coach tax commenced - - - - - - - - - - - - - - - - 1747
Two Judges, the Lord Mayor, and many others, died of the gaol distemper caught at the Old Bailey—17,000 geneva shops abolished—100,000l. damage by fire at Port Royal—Westminster bridge opened for passengers - - - - - - - 1750

Year of our Lord.

George III. eldest son to Frederick, created prince of Wales —King's Bench prison built - - - - - - - - - - - 1751
New Style began in England the 3d Sept. being accounted the 14th—Violent rain in Wales, which destroyed 10,000 sheep 1752
Society of Arts and Sciences, London, instituted - - - - 1753
Lisbon ruined by an earthquake, Nov. 1 - - - - - - - - 1755
National Debt was 74,780,886l. 3s. 2d. in - - - - - - - 1757
Temporary bridge at London burnt, but made passable in ten days—London bridge repaired, for which government gave 15,000l. - - - - - - - - - - - - - - - - - - - 1758
Judges appointed for life—Bank of England issued small notes —Gauze manufacture began at Paisley, in Scotland—North America wholly conquered by the English—Edystone light-house rebuilt - - - - - - - - - - - - - - - - - 1759
Portsmouth dock-yard burnt by accident, damage 400,000l.—Poor-rates of England were 1,556,804l.—Shipping of England was 300,416 tons, and 70,000 men—George II. died, and George III. succeeded - - - - - - - - - - - - 1760
Tide ebbed and flowed four times in the hour at Whitby—Buckingham palace purchased for the Queen - - - - - - - 1761
Three Cherokee chiefs arrived in England—Cock-lane ghost detected—Porter raised 2d. per gallon—Thirteen whales driven ashore on the English coast—Wedgwood's china made in England—Snow for 11 days - - - - - - - - - - - 1762
A great frost for 94 days—America confirmed to England—W. Hicks, Esq. left 300l. a year to the Marine Society - - - 1763
Stamp act in America passed—Franking letters restrained—Harrison's time-piece discovers the longitude - - - - - - - 1764
Isle of Man annexed to the English crown - - - - - - - 1765
East India Company give 400,000l. for five years prolongation of their old charter - - - - - - - - - - - - - - - 1769
Portsmouth dock-yard accidentally burned, damage 100,000l.—Adelphi buildings, Strand, London, built—Blackfriars bridge finished—Edystone light-house again burnt down - - - 1770
Solway, Moss, near Carlisle, moved for four days - - - - 1771
Negroes declared free in this country—Artists Room in the Strand, and Arts and Sciences House in the Adelphi, built —Revolution in Denmark, when the queen was imprisoned, January 17—Augusta, princess dowager of Wales, died, aged 53—Insurrection at Christianstadt, which ended in a revolution in Sweden, rendering the king absolute, and completed at Stockholm - - - - - - - - - - - - - - - - 1772
Review of the fleet at Portsmouth by his Majesty—Order of the Jesuits suppressed by the pope—Disturbances in America begin by the destruction of tea on board three ships at Boston, December 18—600,000 chaldrons of coals used in London - - - - - - - - - - - - - - - - - - 1773
Dr. Franklin's petition dismissed, January 29—Literary property determined, February 22—Grenville's act for elections made perpetual, March 31—Louis XV. dies May 10, aged

Year of our Lord.

64—Turkish army ruined by the Russians, June 20.—Peace between the Russians and Turks, near Schumla, July 21.—The ancient parliament of Paris restored, November 12.—Charles Stuart, pretender—L. Euler, mathematician—Stamp duties began in Ireland - - - - - - - - - - - - 1774

Hostilities in America began at Lexington, April 19.—Action of Bunker's-hill, June 17.—Dr. Johnson—Oil consumed in London this year cost 300,000l.—Four Dublin packets foundered in a storm - - - - - - - - - - - - - - 1775

Congress assume independency, May 15, and declare it, July 4.—Attack on Charlestown, June 28.—General Howe lands on Staten Island, July 3.—Battle on Long Island, August 27.—New York taken, September 15.—Dr. Rt. Lowth bishop of London—Capt. Cook's second voyage round the world concluded - - - - - - - - - - - - - - - - - 1776

Ticonderago taken by General Burgoyne, July 6.—General Howe embarks his army off Staten Island, July 24, and lands in Chesapeak Bay, August 30.—Philadelphia taken, September 26.—Battle of German Town, Oct. 4.—Gen. Burgoyne's army surrenders at Saratoga, Oct. 16.—Mons. Buffon - - 1777

Treaty between France and the Americans, February 6.—Philadelphia evacuated, June 18.—Action in the Jerseys, June 28.—Austrians and Prussians begin hostilities, July 7.—Action at sea between the English and French fleets, July 27.—Siege of Rhode Island, August 9; raised the 30th.—Pondicherry taken, October 17.—French routed at St. Lucia, December 23.—Voltaire and Linnæus died—Mons. Diderot —20,500,000l. coined since 1771, in guineas and half-guineas - - - - - - - - - - - - - - - - - - 1778

St. Vincent's taken by the French, June 17; Grenada, July 3.—Ireland allowed a free trade - - - - - - - - - - - 1779

Rodney took 22 sail of Spanish ships, January 28,—Engagement with Langara, January 16.—Riots in London, July—War against Holland, December 20.—Woollen goods first exported from Ireland - - - - - - - - - - - - - 1780

St. Eustatia taken, February 3; retaken, November 17.—Earl Cornwallis surrendered his army, October 19.—Death of lord Hawke, October 17. - - - - - - - - - - - - - - - 1781

Minorca taken, February 5.—Admiral Rodney beat count de Grasse, April 12.—Independence of America admitted, November 30.—Royal George overset at Spithead—6000 charity children met at St. Paul's London - - - - - - - 1782

Preliminaries of peace, Jan. 20.—Armistice between England and Holland, February—Definitive treaty, September 3.—English manufactures produced 56½ millions—Order of St. Patrick in Ireland began—Three earthquakes in Calabria - 1783

Peace ratified with America, March 24; with Holland, May 24.—First bishop consecrated in America—Paisley gauze manufactory employed 11,624 hands, and yielded 350,000l. and its handkerchief manufactory yielded above 164,385l. - 1784

Year of our Lord.

Irish propositions attempted and rejected—Spinning machines invented in Yorkshire—Frost 115 days - - - - - - - 1785

Droit d'aubaine abolished in France—Commercial treaty with France, signed October 29.—8,000,000 souls in England - - - - - - - - - - - - - - - - - - 1786

Amsterdam taken possession of by Prussia, Oct. 9.—Agreement between France and England to disarm, October 9.—Quarre between the king of France and parliament begun—Botany Bay settlement begun—7,500,000l. worth of cotton wool manufactured in England - - - - - - - - - - - - 1787

War between the Turks, Germans, and Russians—Treaty between Great Britain and Russia, June 13.—Stadtholdership guarantied to the prince of Orange by the United States of Holland, June 27.—Russia declares war against Sweden, June 30.—George III. attacked by an alarming disorder, Nov. 6.—French notables assembled, Novem. 5.—Ocksakow taken, Dec. 17.—Life and horse guards disbanded—865,880 chaldrons of coal used in London; duty, 303,718l. and the duke of Richmond has 15,000l. yearly—Customs, 3,000,000l.—Exports were 18,296,166l. 12s. 11d. and Imports were 17,804,024l. 16s. 1d.—Newspapers printed, 15,564,203, and produced to government 129,000l.—Post office clear amount 400,000l. - - - - - 1788

General illumination in England on the king's recovery, March 10.—Insurrection in France, March—States General of France convened, May 5.—French king makes concessions, June 26.—Revolution in France, July 3.—Bastile destroyed, July 20.—Insurrection in Brabant, August 10.—Bender taken, October 8.—Ghent surrendered, November 23; and Brussels, December 12.—Mail coaches increased the post-office revenue 300,000l.—Sunday Schools became general - - - - - - - - - - - - - - - - - - - 1789

Joseph II. emperor of Germany, died February 20.—The French clergy deprived of their benefices, and have small pensions decreed in lieu of them, February—Parliaments abolished in April—Titles suppressed, June 19.—Ceremony of the confederation, July 14.—Neckar resigns, and retires to Switzerland, September 4. - - - - - - - - - - - - - - - 1790

Mirabeau dies in March—Louis and his family escape from Paris, but are stopped at Varennes, June 21.—Treaty of Pilnitz, July—Riots in Birmingham, July - - - - - - - - 1791

Leopold II. emperor of Germany, dies suddenly, March 1.—Gustavus III. king of Sweden, shot by Ankarstrom, March 15.—French declare war against Germany—Duke of Brunswick publishes his manifesto, July 25.—Swiss guards, and all the servants at the Thuilleries, murdered, August 10.—Royal family of France imprisoned.—Princess Lamballe, and 1000 others, massacred in Paris—Royalty abolished, and France declared a republic, September 20.—Battle of Gemappe, November 7. - - - - - - - - - - - - - - 1792

Year of our Lord.

Louis XVI. perishes under the guillotine, Jan. 21.—The French republic declares war against England, Holland, and Spain, Feb. 2.—The French defeated near Tournay by the duke of York, May 8.—Dumourier endeavours to restore royalty—Marat murdered by Charlotte Cordey, July 14.—Toulon submits to lord Hood, Aug. 23; who is obliged to leave it, Dec. 19.—General Custine executed in July; and the queen of France, by the guillotine, Oct. 16.—The heads of the Giroudist party executed, Oct. 30.—Valenciennes besieged from May 23d to July 14th, when the French garrison surrendered it to the combined army under the command of the duke of York; retaken by the French the next year—The duke of Orleans guillotined - - - - - - - - - - - - 1793

Martinico taken by Sir Charles Grey, March 26.—Elizabeth, sister to the late king of France, guillotined, May 12.—Lord Howe's victory over the French fleet, June 1.—Earthquake and Eruption of Mount Vesuvius, June 13 to 24.—Robespierre and his party executed by torch-light, July 28.—Trial of Thomas Hardy, &c. for high-treason, began in the month of Oct.—Fire at Wapping, in London, where upwards of 630 houses were consumed, together with an East India warehouse, in which 35,000 bags of saltpetre were destroyed; the whole loss estimated at above 1,000,000l. sterling—Warsaw taken by the Russians after a bloody engagement, Nov. 8. - 1794

Revolution in Holland; the stadtholder arrives in England, Jan. 20.—Prince of Wales married to the princess Caroline of Brunswick, April 8.—Peace between Prussia and France, April 10.—Warren Hastings acquitted, after a trial of seven years, April 23.—Captain Molloy's court-martial, April 28.—Dauphin of France died at Paris, June 9.—Three French ships taken by Lord Bridport, June 25.—Quiberon expedition fails, July 21.—Peace between France and Spain, July 22.—Cape of Good Hope taken from the Dutch, Sept. 23.—Censeur of 74 guns, and great part of the Mediterranean fleet, captured by the French, Oct. 7.—Gold mine discovered in Ireland, 9th.—Stanislaus, king of Poland, made a formal surrender of his crown; his kingdom partitioned between Russia, Austria, and Prussia, Nov. 25.—Church of St. Paul, Covent-garden, London, burnt - - - - - - - 1795

The king daringly assaulted in his carriage on his way from the theatre, Feb. 1.—The king of Poland was compelled to sign the abdication and resignation of his kingdom, March—Sir Ralph Abercrombie took St. Lucia, May 25.—A large Dutch fleet surrendered to admiral Elphinstone, consisting of three ships of the line, five frigates and sloops, and a store-ship, at the entrance of Saldanah bay, near the Cape of Good Hope, Aug. 16.—General Washington resigned the presidency of America, the 17th, and was succeeded by Mr. Adams.—Spain declared war against Great Britain, Oct. 10.—Catherine II. empress of Russia, died, Nov. 17.—Corsica evacuated by

Year of our Lord.

the English, November—The French fleet attempted to land troops at Bantry Bay, Ireland, but were frustrated by adverse winds, December 24. - - - - - - - - - - - - - - - 1796

Bonaparte defeats the Austrians near Verona, Jan. 14.—He defeats the pope's army near Ancona, February 10.—A famous victory gained by admiral Sir John Jervis over the Spanish fleet off Cape St. Vincent, Feb. 14, in consequence of which the admiral was created Earl St. Vincent—The French land 1200 men at Fisguard, in Wales, February 22.—An alarming mutiny throughout the fleet, at Spithead, April 15.—Another general mutiny broke out in the fleet at Sheerness, May 12.—The princess royal of England married to the prince of Wirtemberg, the 18th.—Parker, the chief leader in the mutiny, executed, June 30.—Admiral Duncan defeated the Dutch fleet, of which he captured nine ships of the line, October 12, and was created a viscount—A general thanksgiving for the great naval victories of Lords Howe, St. Vincent, and Duncan; the king and both houses of parliament going in grand procession to St. Paul's, December 19. - - 1797

Ireland put under martial law, March 30.—Rebellion broke out in the south of Ireland, April 2.—The British troops, under general Coote, destroy the sluices on the canal between Bruges and Ostend, but are afterwards compelled to capitulate to the French, May 20.—Battle of Naas, May 24; Hacketstown, and Baltinglas, 25th; Taragh hill, 27th; New Ross, June 5; Vinegar hill, 21st; Kilconnel hill, 26th; Gore's-bridge, July 1.—O'Coigley executed at Maidstone for high treason, June 7.—The glorious victory off the Nile achieved by admiral, afterwards baron, Nelson, in which he took nine ships of the line from the French, burnt 2, &c. August 1.—The French landed in Killala bay, Ireland, the 24th, and surrendered September 8.—Victory of Sir J. B. Warren over the French fleet off Ireland, in which the Hoche of 80 guns, and 3 frigates, were captured, October 12.—The Income Tax brought forward, December 3.—The king of Sardinia forced by the French to sign a renunciation of his throne, 9th.—The king and queen of Naples arrive at Palermo, having fled from Naples on the approach of the French, 28th. - - - - - 1798

Naples taken by the French, Jan. 24.—Suwarrow's successes against the French, April 27, 28. June 19. Aug. 15.—Seringapatam taken, Tippoo Saib killed, May 4.—Gen. Massena successful against the Austrians, 25 to 28.—Massena defeated by the archduke Charles, June 5.—Duke d'Angouleme married to the princess-royal of France at Mittau, the 9th.—Earl Howe died, aged 72, August 5.—Pope Pius VI. died at Valence, in his 82d year, the 19th—Surinam taken from the Dutch, the 23d.—Dutch fleet taken by admiral Mitchel, the 28th.—The Duke of York sails from Deal on an expedition against Holland, Sept. 9.—Bonaparte arrives in France from Egypt, Oct. 16.—Total failure of the British against Hol-

Year of our Lord.

land, 20th.—Bonaparte changes the government of the republic, and is appointed first consul, Nov. 10.—General Washington died, the 15th.—Great scarcity of corn this year, and soup-shops established - - - - - - - - - - - - - 1799

Bonaparte makes overtures for peace to the British government, which, however, the ministry think proper to reject, Jan. 1 to 17.—Battle of Novi, the 8th.—George Stevens died, the 22d.—Cardinal Gregorio Barnaba Chioramonte elected pope at Venice; he takes the name of Pius VII. Feb. 14.—General Suwarrow died, April 2.—Battle of Stockach, May 4.—Hadfield shoots at the king at Drury-lane playhouse, (was tried and acquitted, as insane,) the 15th.—Sir F. Buller died, June 5.—Great Battle of Marengo, the 14th.—Kleber assassinated in Egypt, ibid.—First stone of the wet-dock, at the Isle of Dogs, laid, July 12.—Unsuccessful attempt of the English upon Ferrol, in Spain, August 25.—Malta taken by the English, September 5.—Conspiracies to kill Bonaparte, October 10, and December 24.—Embargo laid by Russia upon British ships, September 10, and November 27.—Russia, Sweden, and Denmark, unite against England - - - - - - 1800

Union between Great Britain and Ireland, January 1.—Lavater, the physiognomist, died at Berne, the 3d.—The first parliament of the United Kingdom of Great Britain and Ireland met, the 22d.—Peace signed between the French republic, and the emperor of Germany, at Luneville, February 9.—The English ministry changed, and Mr. Pitt retires in March—Victory over the French in Egypt, March 21, in which Sir R. Abercrombie received a wound, which he survived but a few days—Bread 1s. 10½d. the quartern loaf—Paul I. emperor of Russia, died, the 23d, and is succeeded by Alexander—Peace between France and Naples, the 28th.—The Danes take possession of Hamburgh on the 29th.—Sir Hyde Parker and Lord Nelson pass the Sound, and, after destroying the fleet at Copenhagen, make a peace with the Danes, April 2.—Conquest of Egypt completed by General Hutchinson, July—Lord Nelson's unsuccessful attempts on the flotilla at Boulogne, August 6, and 15.—Preliminaries of peace signed by England and France, October 1. - - - - - - 1801

Governor Wall executed for the murder of a serjeant in the island of Goree, after his crime had been concealed 19 years, January 28.—Peace finally concluded between England, France, Spain, and Holland, March 27. - - - - - - - 1802

Colonel Despard and six others executed for high treason, February 21.—War declared by Great Britain against France, May 16.—St. Lucia taken by the English, June 20, and Tobago on the 30th.—Insurrection in Dublin, and murder of Lord Kilwarden, July 23.—Hanover taken by the French—French army at Cape Francois, in St. Domingo, capitulate with the Blacks for the evacuation of the island, Nov. 19, and afterwards submit to an English squadron, with their ships of war and merchantmen, the 30th. - - - - - - 1803

Year of our Lord.

His Majesty's illness, during the months of Feb. and March—A French squadron in the East Indies, under admiral Linois, beaten off by the English East India fleet, February 15.—Bonaparte proclaimed emperor of the Gauls, May 20, which finishes the republic of France, after it had continued 4136 days, only one day less than the duration of the Commonwealth in England, that immediately followed the decapitation of Charles I.—Coronation of Bonaparte by the Pope, at Paris, as emperor of the Gauls, December 2. - - - - - 1804

Bonaparte assumes the title of King of Italy, May 26.—Lord Melville impeached for misapplying the public money, while Treasurer of the Navy—Battle between the English fleet, under admiral Calder, and the combined fleets of France and Spain, in which the latter lost two ships, July 22; after which the English admiral was recalled, tried by court-martial, and dismissed the service—Calamitous earthquakes in the S. of Italy, July 26, followed by an eruption of mount Vesuvius, Aug. 12, in which 20,000 persons perished—Austria and Russia unite against France, Aug.—Austrian army, under general Mack, surrender at Ulm to Bonaparte, the 20th.—Massena successful in Italy against the archduke Charles, Oct. Nov.—Victory over the combined fleets of France and Spain, from Cadiz, off Cape Trafalgar, by the English fleet under lord Nelson, who fell in the engagement, the allies losing 19 sail of the line, and the French admiral and the two Spanish admirals taken, Oct. 21.—Four French ships, (part of the combined fleet escaped from the battle of Trafalgar,) taken by Sir R. Strachan, Nov. 3.—The French enter Vienna, the 14th.—The English invade Hanover, and Sir Sidney Smith fails in an attack on the Boulogne flotilla, November—The king of Sweden declares war against France—British and Russian army of 15,000 men received by the Neapolitans, in violation of a treaty just concluded with France, November 20.—Battle of Austerlitz, in which the allied armies of Austria and Russia, commanded by their respective sovereigns, were completely overthrown by the French army under the emperor Napoleon, December 2.—Peace between France and Austria, concluded at Presburg in Hungary, 27th.—Bavaria and Wirtemberg erected into kingdoms by the favour of Bonaparte - - - 1805

Funeral of Lord Nelson, and grand procession to St. Paul's, Jan. 9.—Cape of Good Hope taken by General Baird and admiral Sir Home Popham, 10th.—Death of Mr. Pitt, the 23d, in his 47th year—New ministry appointed, in which Mr. Fox and most of his friends are included, Feb.—General Picton tried for the torture of Louisa Calderon in the island of Trinidad, and found guilty, Feb.—The French subjugate Naples; the English and Russian army, and the royal family, retreating to Sicily—Adm. Duckworth defeats a French squadron near St. Domingo, takes 3 ships of the line, and destroys two, Feb. 6.—Two French ships, (under admiral Linois,) hav-

Year of our Lord.

ing for a long time preyed upon our East India trade, are captured by Sir J. B. Warren, March 13.—The king of Prussia shuts the ports of the North against the English, 28th; takes definitive possession of Hanover, April 1.—Hostilities between the Swedes and Prussians on the taking possession of Hanover by the latter, 23d.—Violent discontents in America at the conduct of British cruisers to their merchantmen—Proclamation of the President of the United States, on the 3d of May, for the apprehending of the captain of the English ship Leander, by a shot from which John Pearce, an American sailor, was killed, near the harbour of New York, April 25.—Orders issued to capture and destroy all Prussian vessels, May 29.—Louis Bonaparte proclaimed king of Holland, June 11.—Lord Melville acquitted of the impeachment preferred against him, 12th.—War formally declared in London against Prussia, 14th.—Buenos Ayres taken from the Spaniards by Sir Home Popham, 28th.—The magazine of Malta blown up, containing 370 barrels of gunpowder, and 1600 shells, and destroying or wounding about 1000 persons, July 18.—Buenos Ayres retaken by the Spaniards, on the 12th, after an attack of 3 days—Death of the Right Hon. Charles James Fox, Sept. 13.—Sir Samuel Hood took four French ships heavy laden with troops, 25th.—Great battle of Jena, in which the French defeat the Prussians, October 14—The Turks declare war against the Russians, December 30. - - - - - - - - - 1806

The Dutch island of Curaçoa surrendered to four British frigates, Jan. 1.—The British troops, under the command of Brigadier-general Auchmuty, take possession of the town and citadel of Monte Video, Feb. 3.—Battle of Prussian Eylau, 8th.—A British squadron, under the command of J. T. Duckworth, fails in an attempt to force the Porte to make peace with his Britannic majesty, March 1.—Alexandria taken from the Turks by major-general Fraser, 21st.—The English defeated at Rosetta, with the loss of 467 men, 31st.—Mutiny at Malta, began April 4, and ended on the night of the 12th, when the mutineers blew themselves up, by setting fire to a large magazine containing between 4 and 500 barrels of gunpowder—The English again defeated in Egypt with the loss of about 1100 in killed and wounded, 19th.—Chudleigh, a market town in Devonshire, consisting of about 200 houses, entirely consumed (7 houses and the church excepted) without the loss of a human life, 22d.—Agreeable to an act of parliament, no slave-ships are to clear out of British ports after May 1.—Insurrection in Turkey; deposition and murder of their emperor Selim III. May—Dantzic surrendered to the French, May 26.—Mustapha IV. ascends the throne of Turkey, 29th.—Great battle of Friedland between the Russians and French, in which the former were completely overthrown, 14th.—The loss of the Russian army in the different actions, at Spanden on the 5th, Deppen on the 6th, Gutstadt on the 8th, Heils-

Year of our Lord.

burg on the 10th, and Friedland on the 14th, amounted to 60,000 men in killed, wounded, and prisoners, 120 pieces of cannon, and 7 standards—The French enter Konigsberg, 16th. —An armistice concluded between the Russians and French, 22d.—Treaty of Tilsit, according to which the Prussians gave up all their possessions between the Rhine and the Elbe, and also all their Polish dominions, to the disposal of Napoleon, July 6.—British attack on Buenos Ayres, under lieutenant-general Whitelocke, in which they were repulsed, ibid; and all South America to be evacuated in two months from July 17.—The British troops land without opposition on the island of Zealand, before Copenhagen, 16th.—The Swedes evacuate Stralsund, 21st.—An armistice concluded between the Russians and Turks, 24th.—The garrison of Copenhagen capitulate to the British troops, after a severe bombardment of 3 days, Sept. 6.—Agreeable to which the Danish fleet, consisting of 17 ships of the line, 12 frigates, &c. is to be delivered up to the English, and Zealand to be evacuated by the British, in 6 weeks—Alexandria evacuated by the English, 22d. —Portugal shuts her ports against the English, Oct. 20.—The Russians declare war against England, 26th.—The English government declares France in a state of blockade, Nov. 11. —The prince regent and court of Portugal sails from Lisbon for the Brazils, 29th.—The French enter Lisbon, ibid.—French imperial decrees of Nov. 23. Dec. 17, and 26, 1807, Jan. 11, 1808, &c. restricting the commerce of neutral powers—Jerome Bonaparte issues his proclamation on his accession to the throne of Westphalia, Dec. 17,—The English declare war against Russia, 18th.—An embargo laid by Congress on all vessels of the United States, 22d. - - - - - - - - 1807

Pope Pius VI. protests against the demands of the French, Feb. 2.—The duke of Berg enters Madrid with a French army, April 24.—Insurrection in Madrid, May 2.—The king and princes of the house of Bourbon cede their rights to the throne of Spain, 5th to the 10th.—The pope's territories annexed to the kingdom of Italy, 21st.—Joseph Bonaparte declared king of Spain, June 6.—A French squadron at Cadiz surrenders to the Spaniards, 14th.—General Dupont, and 8000 French, surrender to the Spaniards, July—Mohammed V. succeeds Mustapha IV. in the Turkish empire, 28th.—Prince Murat proclaimed king of the two Sicilies, Aug. 1.—Defeat of the French in Portugal by Sir A. Wellesley, 21st.—Convention of Cintra, by which the French, &c. evacuate Portugal, 30th. —Meetings of the emperors of France and Russia at Erfurth, Sept. 27.—Bonaparte leaves Paris for Spain, 30th.—The French re-enter Madrid, Dec. 4.—General Moore's army obliged to retreat from the interior of Spain - - - - - - 1808

Gen. Moore's army attacked at Corunna by the French, who were repulsed; but Gen. Moore killed, and Sir D. Baird wounded; and in the evening the remains of our army hastily

Year of our Lord.

embark, Jan. 16.—Saragossa taken by the French, Feb. 21.—Gustavus IV. king of Sweden arrested and deposed by his subjects, March 15.—War between Austria and France, April 9.—The French defeat the Austrians at Abersberg, Landshut, Echmuhl, and Ratisbon, with great loss, 20th to the 23d.—Vienna captured, May 13.—The French, in an attack upon the Austrians, in imminent danger, by the destruction of the bridges over the Danube, 21st.—The Duke of Sudermania crowned king of Sweden, as Charles XIII. June 29.—The French cross the Danube, and carry the Austrian entrenchments, July 4th and 5th; defeat their army at Wagram, 8th.—Battle of Talavera, in which the French were repulsed, but the allies retreat a few days after, 21st.—The latter end of July a British expedition of 100,000 land and sea forces, under the earl of Chatham, sail to the coast of Holland—Surrender of Flushing, 15th.—Lord Chatham arrives in town from the Scheldt, without accomplishing the objects of the expedition, Sept. 16.—Lord Castlereagh and Mr. Canning, two of the privy council, fight a duel, 21st.—Peace concluded between France and Austria, Oct. 14.—His Majesty entering on the 50th year of his reign, the day observed as a national jubilee, 25th.—Walcheren evacuated by the English, Dec. 13.—The emperor Bonaparte and the empress Josephine dissolve their marriage, 15th. - - - - - - - 1809

Treaty of peace between Sweden and France signed, Jan. 6.—Guadaloupe surrendered to the British, Feb. 5.—The spire of St. Nicholas' church, Liverpool, fell, and killed upwards of 20 persons, Sunday the 11th.—Marriage of the Emperor of France to the Archduchess Maria Louisa of Austria at Paris, April 1.—Louis Bonaparte abdicates the throne of Holland, July 9.—Bernadotte, Prince of Ponte Corvo, chosen by the Diet, Crown Prince of Sweden, Aug. 21.—Massena defeated by Lord Wellington at Busaco, Sept. 17. - - - - 1810

Marshal Victor defeated by Gen. Graham at Barosa, March 5.—The Empress of France delivered of a son, 20th.—Sanguinary battle near Badajos, between Soult and Gen. Beresford, May 16.—Bonaparte calls out a levy of 120,000 men, Dec. 23. 1811

Cuidad Rodrigo taken by Lord Wellington, Jan. 19.—Russia declares war against France, March 19.—Badajos taken by storm, April 6.—Marmont defeated near Salamanca by Lord Wellington, July 18.—Battle of Moskwa, Sept. 7.—Moscow entered by the French, and which they find in flames, 14th.—The French evacuate Moscow; the Russians enter it, Oct. 22.—The French lose all their horses and artillery, and great part of their army, in the retreat from Russia; and Bonaparte arrives at Paris, Dec. 18. - - - - - - - - - - 1812

The emperor quits Paris for the army, April 15.—Battle of Lutzen, May 2.—Battle of Bautzen, 21st.—Armistice between the Russians, Prussians, and French, June 4.—Great victory gained by Lord Wellington at Vittoria, 21st.—

Year of our Lord.

Austria declares against France, Aug. 10.—Lord Wellington's army enters France, Oct. 7.—Complete defeat of the French at Leipsic, 14th to the 19th.—Bonaparte returns to Paris, Nov. 9.—Holland throws off the French yoke, 20th. - - - - - - - - - - - - - - - - - 1813

Lord Wellington crosses the Adour, Feb. 24.—Bourdeaux entered by Gen. Beresford, March 12th.—The allied Sovereigns enter Paris, 31st.—The Senate decree the deposition of Bonaparte, April 2d.—He abdicates; and is to retire to the island of Elba, 4th.—The Bourbons restored by a decree of the new government, 7th.—General peace. - - - - - - - 1814

Return of Bonaparte—Murat defeated and dethroned—Battle of Waterloo —Surrender of Paris to the Allies—Return of Louis XVIII.—Bonaparte exiled to St. Helena - - - - - - - - - - - - - - - - - 1815

New coinage of gold and silver issued, Feb.—The Princess Charlotte died in child-bed, Nov. 6th, aged 22.—Waterloo bridge opened, June 18th. 1817

Her Majesty Queen Charlotte died Nov. 17th, aged 75. - - - - - - - 1818

Southwark bridge opened, March 25th.—Princess Victoria born, May 24.—A beautiful Comet appeared in July. - - - - - - - - - - - - - 1819

Duke of Kent died Jan. 23rd.—Geo. III. died Jan. 29th, aged 82. —Duke de Berri assassinated at Paris, Feb. 13th—Arrival of Queen Caroline in London, June 6th.—Duchess of York died Aug. 6th, aged 53. 1820

Napoleon Bonaparte died at St. Helena, May 5th.—His Majesty King George IV. crowned July 19th.—Caroline, Queen of England, consort of George IV. died August 7th. - - - - - - - - - - - - - - - - - 1821

The Greeks declare their independence, Jan. 1st.—The independence of Mexico, Columbia, and Peru, recognized by the United States, March 19th. 1822

The Burmese defeated by Gen. Campbell, Dec. 5th.—Great commercial distresses, and failure of bankers in England. - - - - - - - - - - 1825

Don Pedro abdicates the throne of Portugal in favour of his daughter, May 2nd.—Don Miguel takes the oath of fealty to the Portuguese constitution, at Vienna, Oct. 4th, which he afterwards disregards. - - - - - - - 1826

Death of the Duke of York, Jan. 4th.—Death of Mr. Canning, Aug. 8th. —The Turkish fleet destroyed at Navarin, by Adm. Codrington, Oct. 20th 1827

York Cathedral set on fire by Martin the lunatic, Feb. 2nd.—Roman Catholic relief bill received the Royal assent, April 13th. - - - - - - 1829

Death of George IV. June 26th.—King William IV. proclaimed, June 28th. —Algiers taken by a French army, July 5th.—Charles X. driven from the throne of France, July 27th to 29th.—Opening of the Liverpool and Manchester Railway, Sept. 15th.: in this month the Netherlanders rise in insurrection against the Dutch.—New administration formed under Earl Grey, Nov. 16th.—Revolution in Poland, and the Russians expelled from Warsaw, Nov. 20th. - - - - - - - - - - - - - - - - - 1830

Revolution in Brazil, and Don Pedro expelled, April 7th.—Prince Leopold elected King of Belgium, June 4th.—The new London bridge opened, Aug. 1st.—Warsaw taken by the Russians, Sept. 7th.—The spasmodic cholera makes its appearance in Sunderland, Nov. 4th. - - - - - - 1831

The English reform bill received the Royal assent, June 7th; the Scotch, July 17th; and the Irish, Aug. 7th.—This year the cholera makes great ravages in Great Britain and other parts of Europe. - - - - - - - - 1832

Adm. Napier defeats the fleet of Don Miguel, July 3d.—Donna Maria landed at Lisbon, as Queen of Portugal, Sept. 22d. - - - - - - - - 1833

Marshal Mortier and others killed by an infernal machine, destined to destroy the French King, July 28th.—Corporation reform bill passed, Sept. 8th.—Upwards of 600 houses burnt in New York, Dec. 16th. - 1835

The Greenwich railway opened to Deptford, Oct. 10th. - - - - - - - 1836

Greenacre, the murderer and horrid mutilater of Hannah Brown, found guilty, April 11th.—Death of King William IV. at Windsor, June 20th. —Accession of her Royal Highness the Princess Victoria to the British throne, June 21st. - - - - - - - - - - - - - - - - - - - 1837

KINGS AND QUEENS OF ENGLAND.

From WILLIAM the CONQUEROR to King GEORGE the FOURTH.

NORMAN KINGS.

WILLIAM THE CONQUEROR

WAS the son of Robert, duke of Normandy, by one of his mistresses, named Harlotte, (whence some imagine the word HARLOT derived,) a skinner's daughter of Falaise; which gave occasion to his being surnamed Bastard; but this he afterwards changed to that of the Conqueror, from his subduing England. He was born in 1027; and succeeded his father as duke of Normandy in 1035, being at that time but nine years old; and after his victory at Hastings, in Sussex, was crowned king of England, on the 14th of October, anno 1066.

He was tall, and so big that his corpulency grew troublesome to him in his latter years. His strength was so great, that historians say, that no person but himself could bend his bow. He was laborious, seasoned to all the hardships of war, and patient in all seasons, in hunger or thirst. He had a great soul, an elevated mind, and so prodigious a genius, that nothing escaped his examination. He delighted in war, understood it well, and was successful in it. When once raised to anger, it was almost impossible to appease him.

He died of a fever, at Roan in Normany, the 9th of September, 1087, in the 61st year of his age, and was buried at Caen, in St. Stephen's abbey, which he endowed with rich revenues.

WILLIAM II. SURNAMED RUFUS.

William the Second, who succeeded his father, was the legitimate son of Maude, daughter to Baldwin, the fifth earl of Flanders.

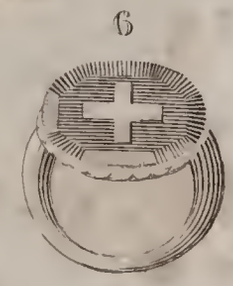
He was born in the year 1057, was crowned king of England, by Lanfranc, archbishop of Canterbury, on the 17th of September, 1087; and being wounded accidentally as he was hunting in New Forest, by one of his domestics, named Walter Tyrrel, a French knight, died of his wound on the 2d of August, 1100, and in the 13th year of his reign, aged 43 years.

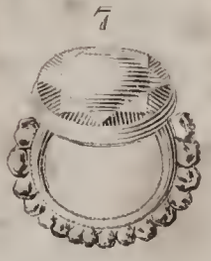
The only good quality remarkable in him, was his signal courage, which rose almost to fierceness; and he carried his vices and tyranny to so great a height, that the wound he received was considered, not as the effect of mere chance, but as sent by the hand of God, in order to rid the English of so wicked a prince.

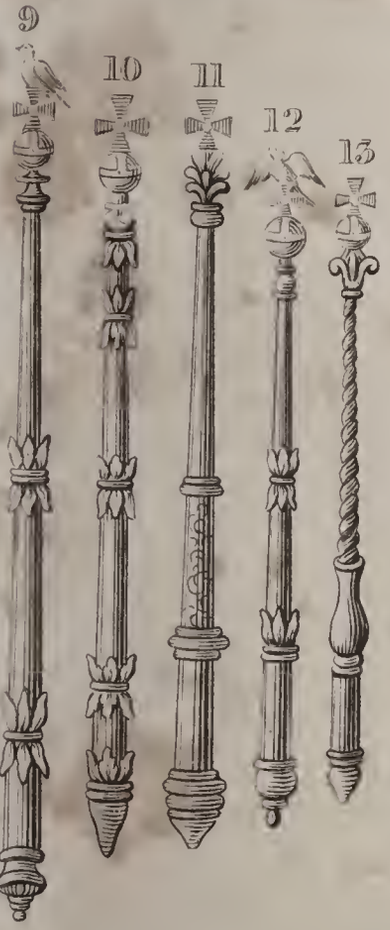
HENRY I. SURNAMED BEAU-CLERK.

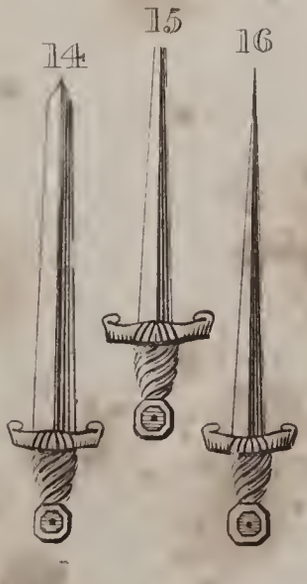
As king Rufus left no issue, his brother Henry (by the same mother) succeeded him, and was crowned king by Maurice, bishop of London, August 5, 1100. He was married first to Maud, daughter to Malcolm king of Scots; and afterwards to Adeliza, daughter to Geoffrey earl of Louvain, by whom he had no issue.

The Regalia of England.









EXPLANATION.

1. S^t Edward's Crown. 2. Queen's Crown. 3 Crown of State. 4. Queen's Circlet. 5. Queen's Rich Crown. 6. King's Coronation Ring. 7. Queen's Coronation Ring. 8. Orb, Mound, or Globe. 9. Queen's Ivory Rod. 10. S^t Edward's Staff. 11. Queen's Sceptre, with the Cross. 12. King's Sceptre, with the Dove. 13 King's Sceptre, with the Cross. 14. Sword of Justice. 15. Sword of Spiritual Justice. 16. Sword of Justice of the Temporality.

His death was occasioned by eating too many lampreys, which threw him into a fever, of which he died in the castle of Lyons, in Brai, near Roan, on the 1st of December, 1135, after a reign of 35 years; and was buried in the abbey of Reading, in Berkshire. He was handsome, brave, and had a great capacity; was extremely sober, and inexorable to offenders; he had a great love for learning, whence he was called Beau-Clerk; but these good qualities were sullied by cruelty, avarice, and uncleanness.

HOUSE OF BLOIS.

STEPHEN.

After Henry's decease, the son of Astela, daughter of William the Conqueror, and of Stephen earl of Blois, was crowned at Westminster, the 26th of December, 1135. He died the 25th of October, 1154, in the 19th year of his reign, and 50th of his age, and was buried in Feversham abbey. His merit consisted in the greatness of his courage, elevated genius, and sound judgment. He was generally skilled in military affairs, had great experience, and wonderful patience. His clemency and munificence were the least of his virtues; and all these were heightened by the stature and majesty of his person, which rendered him one of the most amiable princes of his time.

HENRY II.

Henry II. surnamed Plantagenet, and duke of Normandy, succeeded Stephen. He was the eldest son of Geoffrey earl of Anjou, Touraine, and Maine, and of the empress Maud, sole heir to Henry I. duke of Normandy. He was born at Mans, the 4th of March, 1133, and was adopted by king Stephen, the 6th of November, 1153, and crowned king of England the 19th of December, 1155. He was possessed of many good qualities; was just, brave, generous, clement, magnificient, and prudent; but his ambition and lust were insatiable, and his anger very violent. —On his death-bed he caused himself to be carried to the church of Chinon, and, being laid before the altar, expired. His corpse was carried to Fontevraud, as he had ordered, and there interred. He died the 6th of July, 1189, in the 56th year of his age; having reigned 34 years, 8 months, and 11 days.

RICHARD I. Surnamed LION's HEART.

After the death of Henry II. his second son Richard succeeded him. His mother was Eleanor of Acquitaine, duchess of Guienne, Gascony, &c. His exceeding bravery acquired him the name Cœur de Lion, or Lion's Heart; but for any other virtue, it is needless to seek for it. His person was well shaped: blue eyes, full of fire; and his hair of a sandy colour. His death was occasioned by a wound he had received by an arrow at the siege of Chaluz, in Limousin, of which he died the 6th of April, 1199, in the 43d year of his age, and 10th of his reign, and was buried at Fontevraud

JOHN, Surnamed SANS TERRE.

This prince came to the crown by virtue of the last will of Richard. After having gone through many troubles, disappointments, and vexations, during his reign, chiefly owing to his vice and ambition, he died at Newark, October 19, 1216, through grief for having lost his baggage, which was very rich, which threw him into a fever, and was augmented by eating too many peaches. He had wit, but it was of the vicious kind; was hot-headed, restless, and hasty; had no resolution, but in his first transports; which being over, he was soft, indolent, fearful, and wavering. Was cruel, voluptuous, and covetous; had no religion, conscience, honour, or regard to futurity. He died in the 51st year of his age, and in the 18th of his reign.

HENRY III.

This prince succeeded his father, in the 10th year of his age. He was born October 1, 1207, and crowned at Gloucester, October, 28, 1216, and died in London the 16th of November, 1272, aged 66, of which he had reigned 56 years and 28 days. He was a prince of very few parts, naturally inconstant and capricious. He loved money to excess; but then he squandered it away so idly, that the prodigious sums he levied upon his subjects did not make him the richer. Nothing can be said as to his courage, because he never gave any sensible tokens of it; but he may be justly applauded for his continence, and aversion to whatever tended to cruelty; and, to conclude his character, his weakness in suffering himself to be governed by haughty self-interested counsellors, and the arbitrary maxims instilled in his infancy, were the real causes of the commotions which disturbed his government.

EDWARD I. Surnamed LONG-SHANKS.

After the death of Henry III. Edward his Eldest son, by Eleanor of Provence, succeeded him, and was crowned on the 19th of August, 1274; and historians say, that, on his coronation-day, five hundred horses were let loose about the fields, with liberty to every person to keep as many as they could catch.

He was extremely well shaped, and very tall, but his legs were a little too long, on which account he was surnamed Long-Shanks. He was an excellent king, a good father, a formidable enemy, and a good captain. He was chaste, just, prudent, and moderate, and on his death-bed exhorted his son to continue the war with Scotland; adding "*Let my bones be carried before you to battle, for sure I am that the rebels will never dare to stand the sight of them.*" He died at Borough on the Sands, a small town in Cumberland, the 7th of July, 1307, after a regn of 34 years, 7 months, and 21 days. His body was taken to Westminster, where it was inclosed in wax, and deposited near that of the king his father.

EDWARD II.

Prince Edward, after his father's death, succeeded him, and was the only son who survived him. He began his reign in 1307, and

was one of the handsomest and best-shaped men of his time, and had so majestic an air, that it was almost impossible to look on him without entertaining an esteem for him: but the beauties of his body did not correspond with his mind. He was neither a warrior nor a politician; neither zealous of his country's good, nor passionate of glory; neither was he endued with capacity for difficult affairs, nor had he a genius sufficient to contrive, or resolution to go through with such: to these circumstances were owing all the misfortunes of his reign. This monarch was deposed, and his son proclaimed king in his stead; and was imprisoned at Kennelworth castle, but removed afterwards to Berkley castle; where Sir T. Gurney and Sir J. Maltravers put him to a cruel death, causing a red-hot iron to be thrust up his fundament; and in these cruel tortures he expired, January 1327, after a reign of near 20 years.

EDWARD III.

Edward the Third, eldest son of the deceased king, by Isabella of France, succeeded his father at the age of 14, in 1327. Historians say, that the bare aspect of this prince drew respect and veneration. He was gentle and beneficent to people of virtue, but to the vicious inexorable; a friend to the poor, the widow, and orphan, and to the unfortunate in general, and his greatest delight was to soothe their misfortunes; and though his valour was well known to the world, it never puffed him up. His subjects were dear to him: and the uninterrupted union that subsisted between him and his queen, augmented his felicity. In short, he might have been looked upon as a perfect prince, had not his ambition prompted him to break, in an illaudable manner, the peace he had concluded with the Scots. He died the 21st of June, 1377, in the 65th year of his age, and 51st of his reign.

RICHARD II.

This prince, (who was grandson to the deceased king) came to the crown in the 11th year of his age; was born at Bourdeaux, the 6th of January, 1366, and made prince of Wales in 1367. Twenty-four days after Edward died, Richard was crowned at Westminster.

He was son to Edward the Black Prince, (so called on account of his wearing black armour) who was the first prince of Wales.

This unfortunate prince being of a lavish and profuse disposition, caused his subjects to revolt from him, and take up arms against him; and on his return from Ireland, was seized and imprisoned in Flint Castle, near Chester; but some time after was sent to Pontefract Castle, in Yorkshire, where Sir Pyers Exton, with eight men, was sent to destroy him: but the king resolved to sell his life as dear as possible, and killed four of the assassins before he fell himself, which Exton himself effected. Thus died this unhappy prince, at 33 years of age. He was, as historians relate, the handsomest monarch in the world; kind and munificent, but soft, timid, of little genius, and too great a slave to his favourites.

HOUSE OF LANCASTER.

HENRY IV. Surnamed Of BOLINGBROKE.

This prince who swayed the sceptre after the deposing of Richard II. began his reign the 29th of September, 1399. He was son to John of Gaunt, third son of Edward III. His chief character was an extreme desire of reigning, and he came to the throne by a method which was universally disapproved, he having caused king Richard to be murdered, which will be an eternal blot to his memory. He did not perform a single action during his reign worthy of encomium, and he was continually tormented with a series of revolutions. It is said that he died of a leprosy the 20th of March, 1413, being the 14th of his reign, and the 46th of his age; but some writers say he died of an ague.

HENRY V. Surnamed Of MONMOUTH.

Henry V. eldest son to Henry IV. by Mary le Bohun, daughter of Humphrey earl of Hereford, was born at Monmouth, and was made prince of Wales in 1389, and began his reign in 1413.

He was well shaped, and warlike; an experienced soldier, and a great politician; of an extensive genius in laying his schemes, which never failed to succeed. As he was a friend to justice, he obeyed its dictates, and made others do so likewise: he was devout without ostentation, and a great protector of the church and clergy; but a little ambitious; not liberal; inclined to cruelty; and in his father's time had led a dissolute life.

He died of a bloody flux at Vincennes, Aug. 31, 1422, in the 34th year of his age, after a triumphant reign of nine years and five months. He left a son, brought him by Catharine his queen.

HENRY VI. Surnamed Of WINDSOR.

This prince was but nine months old when he ascended the throne. He was born at Windsor, Dec. 16, 1421.

He was a just, temperate, and pious prince; and resigned himself wholly to the dispensation of Providence. He bore with uncommon patience all the sinister accidents of life. His only defect was a sort of weakness of mind, which rendered him incapable of governing his kingdom without the assistance of others.

He was dethroned in the year 1461, but recovered his crown in 1470; and in 1471 lost it again, together with his life.

After this misfortune of being dethroned, king Henry, the queen his consort, and the prince of Wales his son, fled to Scotland, and were respectfully received in that kingdom; but the year following returned to England, in hopes of concealing himself there, not daring to reside entirely in Scotland, being in dread that the Scots would deliver him up; but unfortunately was discovered and seized, carried to London, and sent to the Tower; where Edward (for his own security) sacrificed him, in the 50th year of his age.

EDWARD IV.

Edward IV. son of Richard duke of York, was crowned Jun

29, 1472, after king Henry's being dethroned; and notwithstanding he was of a most surprisingly active, vigilant, and warlike disposition, he was no sooner vested with regal dignity, than he devoted himself entirely to his pleasures.

He was one of the handsomest men in Europe. Philip de Commines pretends that he died through grief, because Lewis XI. preferred the alliance of the house of Austria to that of his family: but this is not probable. Some have accused his brother, the duke of Gloucester, of poisoning him: but the most likely circumstance is, that his indulging himself at a banquet occasioned his death; for it threw him into a violent fever, of which he died, April 9, 1483, in the 42d year of his age, and 23d of his reign.

EDWARD V.

This unfortunate prince was but twelve years of age when he began to reign; which lasted but two months and twelve days: himself and his brother the duke of York being both murdered by the protector Richard duke of Gloucester, their uncle, who afterwards usurped the crown.

They were lodged in the tower, where it was customary for the kings of England to reside before their coronation; and the protector, upon the refusal made by Sir Robert Brackenbury, lieutenant of the Tower, to be an accomplice in so barbarous a scene of villany, gave the government of it, for one night only, to Sir James Tyrrel, who had suborned one Miles Forest, and John Dighton, who, in the dead of the night, entered the chamber where the two princes lay, and stifled them. These shocking circumstances were told by Tyrrel, who was afterwards executed under the reign of Henry the Seventh.

RICHARD III.

This inhuman wretch was, by the consent of the people, crowned king in 1483, and though his character is well enough known by his abominable actions, he is described as follows:

He was little in stature, very ugly, and crooked backed; a great impostor, dissembler, hypocrite, and cruel in his nature; but at the same time was brave, and sagacious, and caused justice to be administered to all his subjects without distinction. He was greatly skilled in politics, and had a surprising command over himself in concealing his intentions. He was killed in the battle of Bosworth-Field, which he fought against the earl of Richmond, the 22d of August, 1485, who was afterwards king of England. His body, after it was found, was carried to Leicester, and exposed to view for two days, then buried without any ceremony; but Henry VII. some time after, caused a monument to be erected over his grave.

HENRY VII.

After the death of king Richard, the earl of Richmond was crowned king of England, Richard having no legitimate issue.

He was an able prince, chaste and temperate, an enemy to every scandalous vice, assiduous in exercises of piety, and caused justice

to be equally administered, when his private interest was not concerned, for he was insatiably covetous; yet he merited the esteem of all Europe.

He died the 22d of April, 1509, of a consumption, in the 52d year of his age, and 24th of his reign, and was interred in that magnificent chapel which he erected in Westminster-abbey, called Henry the Seventh's Chapel.

HENRY VIII.

Henry VIII. succeeded his father Henry VII. and began his reign April 22d, 1509, being in the 18th year of his age.

He was a comely prince, but grew too corpulent in the latter part of his life. He was skilful in all bodily exercises; brave, without ostentation; of a candid and frank disposition; and liberal to excess. He loved study, and made a great progress in the sciences; perfect master of music, and skilled in philosophy and divinity: but, on the other hand, inclined to cruelty, and withal very presumptuous and lacivious.

He died of a complication of humours falling upon an old sore in his leg, the 28th of January, 1547, in the 56th year of his age, and 38th of his reign. He left behind him two daughters and one son: Mary, by Catherine of Arragon; Elizabeth, by Ann Boleyn; and Edward, by lady Jane Seymour.

EDWARD VI.

This prince began his reign in 1547, and, though but ten years old, was well skilled in the Latin and French tongues, and had also some knowledge of the Greek, Spanish, and Italian.

He was a great promoter of trade and learning, and an encourager of the Reformation; he confirmed the grant of the king his father to the city of London, for Christ's and St. Bartholomew's hospitals; and founded himself those of Bridewell and St. Thomas's, besides several schools: but a consumption carried him off, the 6th of July, 1553, in the 16th year of his age, and 7th of his reign.

MARY.

This princess came to throne after the death of king Edward, her brother. After her coronation, she was espoused to Philip king of Spain, by whom she had no issue.

She was extremely bigotted to the Romish religion, which she would have undoubtedly re-established, had she survived.

Her natural disposition was cruel and revengeful; and we meet with but one good action during her reign, her rejecting the proposal offered by the Spanish ambassador, of making herself absolute. She died of a dropsy, the 17th of November, 1558, in the 6th year of her reign.

ELIZABETH.

After the decease of queen Mary, the princess Elizabeth, her sister, ascended the throne, in her 25th year, Nov. 17, 1558. She was tolerably handsome, and had a most majestic air; but the circumstance that endeared her most to the common people, was

a certain affability which was natural to her, and which won her the affections of the people.

She was mistress of a great deal of wit, as well as of sound judgment, joined to great economy; learned, and spoke several languages; a great politician, and never disclosed any of her secrets, not even to her favourites or chief ministers, who always paid an implicit obedience to her dictates: but the circumstances which, above all, ought to gain her esteem, is her making the English enjoy a felicity unknown to their ancestors.

She was never married. Her policy, and love of liberty, made her entertain an aversion to the wedded state.

She died March 24, 1603, in the 70th year of her age, and 45th of her reign.

JAMES I.

James the Sixth of Scotland, and First of England, son to the unfortunate queen of Scots, succeeded queen Elizabeth. He was born at Edinburgh castle, and baptized a Roman Catholic, June 19th, 1566; but afterwards educated in the Protestant religion.

He was a learned prince, but made not a right use of his knowledge. He was naturally as pacific as queen Elizabeth was magnanimous.

A little before his coronation, an intended conspiracy was discovered, viz, to raise to the throne Arabella Stewart, his cousin-german, and some of the conspirators were executed: the famous Sir Walter Raleigh was accused of being concerned in it, and, after a confinement of twelve years in the Tower, was beheaded October 29th, 1618.

The king died in his palace at Theobald's, of a tertian ague, after three weeks' illness, March 27, 1625, in the 59th year of his age, and 22d of his reign over Great Britain, and 58th over Scotland.

CHARLES I.

The prince, son to king James, by Anne, daughter of Frederick II. king of Spain, succeeded him. He was born in Scotland, Nov. 19, 1600, and began his reign, March 27, 1625.

Some writers say he was religious, chaste, sober, affable, and courteous; of great penetration, solid judgment, and an excellent man. On the other hand, that he was too fond of prerogative, and so weak as to suffer himself to be governed by his wife and favourites; and that by their persuasions he executed several things, which first caused his subjects to murmur, and afterwards to break out into open rebellion, which in the end proved fatal to him; for he was brought to the bar as a common criminal, and sentenced (without being suffered to plead in his own defence) to be beheaded: which sentence was executed three days after it was passed upon him, being January 30, 1649. He suffered death with great constancy, and without discovering the least sign of weakness or surprise; and after his body had been exposed to

public view for several days, in one of the apartments at Whitehall, was carried to Windsor, and interred in St. George's chapel.

From the death of this prince until the year 1660, there was an interregnum, and England was governed by the parliament, which was composed of 144 persons, known by the name of Barebone's Parliament, OLIVER CROMWELL being at the head; but they resigning the administration of affairs, Oliver caused himself to be proclaimed Protector of England, Scotland, and Ireland; and after having established his authority upon the ruins of the parliament, (who were his creatures) and made the protectorship hereditary in his family, after refusing the crown, which the same parliament offered him, he died of a tertian ague, Sept. 3, 1658. It is allowed by all, that Oliver was a renowned warrior. Lord Clarendon, in a publication of his, styles him a brave wicked man; a terror to France, Spain, and the United Provinces.

After his death, his son Richard was proclaimed Protector; but he did not long preserve this title; for in the year 1660, Charles, son to the deceased king, was restored to the crown.

CHARLES II.

This prince was crowned April 23, 1661, being St. George's day. He was liberal even to prodigality; extremely affable; and so easy in conversation, that he seemed desirous of doing good to all. To this was added a sprightly wit and wonderful conception, and he understood the interests of his kingdom better than any of his ministers: but, on the other hand, he was too great a lover of ease; and he was justly blamed for having too great an attachment to the fair sex. He died Feb. 6, 1685, aged 54 years, after having reigned nearly 25 years since his restoration. And though he openly professed the Protestant religion, he nevertheless died (as some authors assert) a Roman Catholic.

JAMES II.

King Charles leaving no legitimate issue by Catherine his queen, daughter to Don Juan, fourth king of Portugal, his brother James, duke of York, was proclaimed king. He was born at St. James's, Oct. 14, 1633, and crowned April 23, 1685.

Historians who have written impartially, say, that he was a kind father, a tender husband, a good master; and would have been a good king, had he not been misled by the wicked ministers about him: that as his most bitter enemies cannot deny but he shewed great bravery on several occasions, when duke of York; so his best friends confess he had more piety than resolution, when king of England: in a word, that the religion he professed was the source of his misfortunes, and the chief cause of his being dethroned. He died at St. Germains, in France, Sept. 6, 1701, in the 68th year of his age.

WILLIAM III. AND MARY II.

After king James abdicated the crown, William Nassau, prince of Orange, and his consort Mary, daughter to king James, were

proclaimed king and queen of Great Britain, the 13th of Feb. 1688, to the inexpressible joy of the judicious and unbigotted part of the kingdom; and were crowned the 11th of April following, at Westminster, with magnificence. On Dec. 28, 1694, queen Mary died of the small-pox.

Her piety was solid; and an uncommon goodness adorned her soul. She had a great sweetness of temper, accompanied with majesty; and an air of grandeur, without the least pride or affectation. Her conduct was admirable; and she entertained a sincere affection for the king her husband, which he as kindly returned. She paid an entire submission to the divine will, which she gave convincing proofs of in her expiring moments, as indeed she had done in the whole tenor of her life.

The king died March 8, 1701-2, at Kensington-palace, in the 52d year of his age, and 14th of his reign.

He was of a middle stature, and a little round-shouldered; had an oval-face, a light brown complexion, and a Roman nose; his eyes lively and piercing; and never looked so well as on horseback, as though nature had formed him to command in the field. But the defects of his body were compensated by the perfection of his mind; being endued with a quick, ready, attentive, and penetrating genius; of sound judgment, admirable forecast, a strong memory, and a calm and intrepid courage. War was his greatest delight, and hunting and shooting his usual diversions. In a word he was one of the greatest men of his age. He had declared himself, on all occasions, an enemy to tyranny and oppression; and, after having preserved his own country, was the deliverer of England, and the defender of the liberties of Europe.

ANNE.

This princess, after the death of king William and queen Mary, her sister, (they having no issue) was proclaimed and crowned queen of England, &c. and on the 21st of May, 1701-2, declared his royal highness George prince of Denmark (her royal consort) lord high admiral of England and Ireland.

The queen, instead of calming all Europe, which was her intention, involved herself in numberless domestic troubles, which soon brought her to the grave; being seized with a kind of lethargy, she expired on the first of August, 1714, on which day the elector of Hanover was proclaimed king. She was virtuous, charitable, and a perfect model of piety; and as a sovereign, easy, kind, and generous. Her majesty was extremely regreted by her subjects, who had loved her with filial affection during the whole course of her reign. She left no children, though she had six; two sons and four daughters.

GEORGE I.

This prince was the eldest son of Ernest Augustus, first duke and elector of Brunswick Lunenburgh, by princess Sophia, daugh-

ter to Frederick Fifth, elector palatine and king of Bohemia, and princess Elizabeth, eldest daughter of king James the First.

He was born the 23d of May, 1660; succeeded his father in the electorate in 1698, and was at Hanover at the death of the queen, and proclaimed king of England, &c. the same day.

He embarked for England, with the prince royal his son, the 16th of Sept. 1714, and landed at Greenwich the 18th, and on the 20th made a magnificent entrance into London.

His majesty, in his last visit to Hanover, was taken ill on the road between Delden and Linden; which illness proceeded from having eat part of a melon, which he did not well digest. Being arrived at Linden, he was let blood: but his majesty being anxious to reach his dominions, travelled on, though he was importuned to the contrary, being much indisposed; but being seized, as he rode in his coach, with a lethargic disorder, he reclined his head on a gentleman who had the honour to be with him, saying at the same time in French, "C'est fait de moi;" that is, I am gone; or, It is over with me. However, about ten that night, he arrived at his brother's, the duke of York, in Osnaburg; and after having again been let blood, expired about one next morning, June 11, 1727, in the 68th year of his age, and the 13th of his reign.

GEORGE II.

As his late majesty died abroad, his death was not known till the 14th of June, 1727, when his majesty king George II. was the next morning proclaimed king, and he with his queen were crowned at Westminster, on the 11th of October.

His majesty found the nation engaged in a war with the Spaniards; but, in 1729, a peace was concluded at Seville, between Great Britain, France, and Spain.

On Oct. 29, 1739, war was declared against Spain; and on Nov. 22, 1740, admiral Vernon, with six ships, took Porto Bello.

Commodore Anson sailed from England with five men of war, in 1740, and after having suffered the most dreadful distresses, surprised and took Paita, on the 12th of Nov. 1741; and having plundered and burnt the town, and seized several Spanish ships, he, on his return by the way of the East Indies, took the Manilla galleon, loaded with treasure. He arrived in England 1743, with the riches he had acquired from the Spaniards, amounting to about 400,000l.

In 1744 war was declared against France; and in 1745 the people of New England, assisted by ten men of war, under commodore Warren, took Cape Breton, with the loss of only 100 men; but were afterward obliged to part with it for Madras.

On the 14th of June, the young Pretender sailed to Scotland in a small frigate, and landed there the 27th of July. He soon obtained a considerable force, and proceeding through several parts of Scotland, had his father proclaimed king, while he himself assumed the title of prince regent. He took several places, and gained some advantages over the king's forces, sent against him: but at length

the duke of Cumberland went to Edinburgh, and took the command of the army, and on the 15th of April came to an engagement near Culloden-house, and obtained a complete victory, in which about 1400 rebels were killed, wounded, and taken prisoners, though the royal army had 60 men killed, and 280 wounded. The earl of Kilmarnoch, lord Balmerino, lord Lovat, and Radcliffe, brother to the late earl of Derwentwater, were afterwards beheaded for this rebellion, on Tower-hill.

Hostilities at length ceased in Flanders, and a general peace was proclaimed in London, Feb. 2, 1749. The French, however, soon broke the peace, by erecting forts on the back of the British settlements in America, and in 1754 attempted to seize Nova-Scotia: these depredations brought on several engagements, which were attended with various successes.

Meanwhile the French landed 16,000 men in Minorca, which were defeated by general Blakeney. His majesty declared war against France on the 17th of May, 1756, and sent admiral Byng with a strong fleet to the relief of Minorca: but he neglecting to fulfil his instructions, the place was lost, and he was tried and shot at Portsmouth.

During these transactions, colonel Clive distinguished himself in the East Indies: and all the towns and factories belonging to the French on the coast of Coromandel, except only Pondicherry, were in a short time taken by the English.

In 1758, the duke of Marlborough landing near St. Maloes, in France, burnt many ships, with a great quantity of naval stores, Lieutenant-general Bligh, and captain (late lord) Howe, took Cherburg, and demolished its fortifications. Soon after, captain Marsh took Senegal, and commodore Keppel took the island of Goree, on the coast of Africa. On the 26th of July, Cape Breton was again taken by general Amherst and admiral Boscawen. Soon after, Fort Fontenac surrendered to lieutenant-general Bradstreet, and Fort du Quesne to general Forbes.

On May 1st, 1759, the valuable island of Guadaloupe surrendered to the English; and the same month, Mariagalante. Santos, and Deseada, became subject to England. And the same year, the French lost Quebec, the capital of Canada.

In 1760, Thurot, with three frigates, arrived in the bay of Carrickfergus; and were all taken by captain Elliot. And on September 8, Montreal and all Canada submitted to the English. But after these glorious conquests, his majesty king George II. to the inexpressible grief of his people, died at Kensington, on the 25th of October, in the 77th year of his age, and 34th of his reign; and the next day his late most gracious majesty was proclaimed king, by the name of George the Third.

The reign of George II. was distinguished by a variety of important events, and chequered with a vicissitude of character and for-

tune. He was in person rather lower than the middle size, well shaped, erect, with eyes remarkably prominent, a high nose, and fair complexion. In his disposition he is said to have been hasty, prone to anger, especially in his youth, yet soon appeased; otherwise mild, moderate, and humane; in his way of living, temperate, regular, and methodical in every branch of private economy. He was fond of military pomp and parade, and personally brave.

GEORGE III.

Eldest son of Frederick, late prince of Wales, was born June 4, 1738; created prince of Wales 1751; succeeded his grandfather October 25, 1760; proclaimed the next day; married Charlotte Sophia, princess of Mecklenburg Strelitz, Sept. 8, 1761, who was born May 19, 1744; and both were crowned Sept. 22, 1761. The queen died Nov. 17, 1818. His majesty was deranged in mind a great part of his latter life, and died Jan. 29, 1820. Their majesties had the following issue.

1. Our present sovereign *George* IV. born Aug. 12, 1762; married April 8, 1795, Caroline Amelia Augusta, daughter of the duke of Brunswick, by Augusta sister of George III, born May 17, 1768; died Aug. 7, 1821. They had issue Charlotte Caroline Augusta, born Jan. 7, 1796; died Nov. 6, 1817.
2. *Frederick*, duke of York, bishop of Osnaburgh, born Aug. 16, 1763; married September 29, 1791, to Frederica Charlotte Ulrica Catharina, princess royal of Prussia, who was born May 7, 1767. The duchess died Aug. 6, 1820.
3. *William Henry*, duke of Clarence, born August 21, 1765; admiral in the royal navy; married to a German princess.
4. *Charlotte Augusta Matilda*, born Sept. 29, 1766, was married to the late duke of Wirtemberg, May 18, 1797.
5. *Edward*, duke of Kent, born Nov. 2, 1767, died Jan. 23, 1820.
6. *Sophia Augusta*, born Nov. 8, 1768.
7. *Elizabeth*, born May 22, 1770, married to the prince of Hesse Homburg.
8. *Ernest Augustus*, duke of Cumberland, born June 5, 1771. married to a German princess.
9. *Augustus Frederick*, duke of Sussex, born Jan. 27, 1773; married in November, 1793, at Rome, to Lady Augusta Murray, daughter of the Earl Dunmore, which was annulled August, 1794.
10. *Adolphus Frederick*, duke of Cambridge, Feb. 24, 1774; married to a German princess.
11. *Mary*, born April 25, 1776; married to her cousin, his royal highness the duke of Gloucester.
12. *Sophia*, born Nov. 3, 1777.
13. *Octavius*, born Feb. 23, 1779; died May 3, 1783.
14. *Alfred*, born Sept. 22, 1780; died August 20, 1782.
15. *Amelia*, born August 7, 1783, died Nov. 24, 1810.

List *of* French *and other Foreign* Words *and* Phrases *in common Use, with their Pronunciation and Explanation.*

Aide-de-camp, (aid-de-cóng.)—Assistant to a general
A la mode (al-a-móde.)—In the fashion
Antique (antéek.)—Ancient, or Antiquity
A propos (ap-ropó.)—To the purpose, Seasonably, or By the bye
Auto da fe (auto-da-fá.)—Act of faith (burning of heretics)
Bagatelle (bag-a-tél.)—Trifle
Beau (bo.)—A man drest fashionably
Beau monde (bo-mond.)—People of fashion
Belle (bell.)—A woman of fashion or beauty
Belles lettres (bell-later.)—Polite literature
Billet doux (bil-le-dóo.)—Love-letter
Bon mot (bong-mó.)—A piece of wit
Bon-ton (bong-to'ng.)—Fashion
Boudoir (boo-dwo'r.)—A small private apartment
Carte blanche (cart-blaunsh.)—Unconditional terms
Chateau (shat-ó.)—Country-seat
Cher d'œuvre (shay-dóovre.)—Master-piece
Ci-devant (see-de-vaúng.)—Formerly
Comme il faut (cum-e-fó.)—As it should be
Con amore (con-am-ó-re.)—Gladly
Con-ge d'elire (congz da-lèer.)—Permission to choose
Corps (core.)—Body
Coup de grace (coo-de-gráss.)—Finishing stroke
Coup de main (coo-de-main.)—Sudden enterprise
Coup d'œil (coo-dail.)—View, or Glance
Debut (day-boo'.)—Beginning
Denouement (da-noo-mong.)—Finishing, or Winding up
Dernier resort (dern-yair ressór.)—Last resort
Depot (dey-po'.)—Store or Magazine
Dieu et mon droit (dyoo a-mon-dwau.)—God and my right
Double entendre (dooble ontóng-der.)—Double meaning
Douceur (doo-so'or.)—Present, or Bribe
Eclaircissement (ec-lair-ceess-mong.)—Explanation
Eclat (ec-lau.)—Splendour
Eleve (el-a've.)—Pupil
En bon point (ong-bon-po'nt.)—Jolly
En flute (ong floot.)—Carrying guns on the upper deck only
En masse (ong mass.)—In a mass
En passant (ong pas-sóng.)—By the way
Ennui (on-we'e.)—Tiresomeness
Entre'e (on-tra'y.)—Entrance
Faux pas (fo-pau.)—Fault or Misconduct
Honi soit qui mal y pense (honee swau kee mal'e po'nss.)—May evil happen to him who thinks evil
Ich dien (ik deen.)—I serve
Incognito.—Disguised or unknown
In pe'tto.—Hid, or in reserve
Je ne scais quoi (zhen-neu-say-kwau.)—I know not what
Jeu de mots (zhoo-de-mó.)—Play upon words
Jeu d'esprit (zhoo-de-sprie.)—Play of wit
L'argent (lor-zho'ng.)—Money or Silver
Mal a-propos (mal ap-rop-o.)—Unseasonable, or Unseasonably

Mauvaise honte (mo-vaiz honte.)—Unbecoming bashfulness
Nom de guerre (nong dey ga'ir.)—Assumed name
Nonchalance (non-shal-aunce.)—Indifference
Outre (oot-ray.)—Preposterous
Perdue (per-doo.)—Concealed
Petit maitre (péttee máiter.)—Fop
Protege (pro-ta-zháy.)—A person patronized and protected
Rouge (roozh.)—Red, or red paint
Sang froid (song frau.)—Coolness
Sans (saung.)—Without
Savant (sav-ong.)—A learned man
Soi-disant (swau dee-zo'ng.)—Pretended
Tapis (tap-pée.)—Carpet
Trait (tray.)—Feature
Tete a tete (tait-ah-tait.)—Face to face, or private conversation of two persons
Unique (yoo-néek.)—Singular
Valet de chambre (val'-ay de shaung.)—Chamber-footman
Vive la bagatelle (veev lah bag-a-tél.)—Success to trifles
Vive le roy (véev-ler-wau.)—Long live the king

Explanation of LATIN WORDS *and* PHRASES *in common Use among English authors. (N.B. The pronunciation is the same as if the words were English; but divided into distinct syllables, and accented as below.)*

Ad ar-bit'-ri-um.—At pleasure
Ad cap-tán-dum.—To attract
Ad in-fi-ni'-tum.—To infinity
Ad lib'-it-um.—At pleasure
Ad ref-er-end'-um.—For consideration
Ad va-lo'-rem.—According to value
A for-ti-o'-ri.—With stronger reason
A'li-as.—Otherwise
Al'ib-i.—Elsewhere, or Proof of having been elsewhere
Al'-ma má-ter.—University
Ang'-li-ce.—In English
A pos-te-ri-ó-ri.—From a latter reason, or Behind
A pri-ó-ri.—From a prior reason
Ar-cá-num.—Secret
Au-di al'-te-ram par'-tem.—Hear both sides
Bo-na fi'-de.—In reality
Cac-o-é-thes scri-ben'-di.—Passion for writing
Com'-pos men'-tis.—In one's senses
Cum mul'-tis a-li-is.—With many others
Cum priv-i-le-gio.—With privilege
Dá-tum, or Dá-ta.—Point or points settled or determined
De fac'-to.—In fact
Dé-i grá-tia.—By the grace or favour of God
De jú-re.—By right
Dé-sunt cet'-er-a.—The rest is wanting
Dram'-a-tis per-só-næ.—Characters represented
Du-ran'-te bé-ne pla''-ci-to.—During pleasure
Du-ran'-te vi'-ta.—During life
Er'-go.—Therefore
Er-ra'-ta.—Errors
Est'-o per-pe't-u-a.—May it last for ever
Ex.—Late.—As, The ex-minister means The late minister
Ex of-fi''-cio.—Officially
Ex par'-te.—On the part of, or On the one side
Fac sím-i-le.—Exact copy or resemblance
Fé-lo de se.—Self-murderer

Fí-at.—Let it be done, or made
Fí-nis.—End
Grá-tis.—For nothing
Ib-í'-dem.—In the same place
I'-dem.—The same
Id est.—That is
Im-prí-mis.—In the first place
In com-men'-dam.—For a time
In for'-ma paú-per-is.—As a pauper or poor person
In pro-pri-a per-sò-na.—In person
In stá-tu quo.—In the former state
Ip'-se dix'-it.—Mere assertion
Ip'-se fac-to.—By the mere fact
I'-tem.—Also, or Article
Jú-re di-ví-no.—By divine right
Ló-cum te'-nens.—Deputy
Mag'-na char-ta (kar'-ta.)—The great charter of England
Me-men'-to mo-ri.—Remember that thou must die
Mé-um et tú-um.—Mine and thine
Mul'-tum in par'-vo.—Much in a small space
Né-mo me im-pù-nè la-ces'-sit.—No body shall provoke me with impunity
Ne plus ul'-tra.—No farther, or Greatest extent
Non com'-pos, or Non com-pos men'-tis.—Out of one's senses
O tem-pora, O mó-res.—O the times, O the manners
Om'-nes.—All
O'-nus.—Burden
Pas'-sim.—Every where
Pro and con.—For and against
Pro bó-no pub-li-co.—For the public benefit
Pro fór-ma.—For form's sake
Pro tem'-po-re.—For the time, or For a time
Quis sep-er-á-bit.—Who shall separate us?
Quo an'-im-o.—Intention
Quò-ad.—As to
Quon'-dam.—Former
Re-qui-es'-cat in pa'ce.—May he rest in peace!
Rex.—King
Scan'-da-lum mag'-na-tum.—Scandal against the nobility
Sem'-per é-a-dem, or Sem'-per í-dem.—Always the same
Si-ne dí-e.—Without mentioning any particular day
Si-ne qua non.—Indispensably requisite, or Condition
Su-i gen'-e-ris.—Singular, or Unparalleled
Sum'-mum bó-num.—Greatest good
Tri-a junc'-ta in uno.—Three joined in one
U'-na vo'ce.—Unanimously
U'-ti-le dul'-ci.—Utility with pleasure
Và-de me'-cum.—Constant companion
Vel'-u-ti in spec'-u-lum.—As in a looking-glass
Ver'-sus.—Against
Vi-a.—By the way of
Vi-ce.—In the room of
Vî-ce ver'-sa.—The reverse
Vi-de.—See
Vi-vant rex et re-gi-na.—Long live the king and queen
Vul-go.—Commonly

CHRISTIAN NAMES OF MEN AND WOMEN.

NAMES OF MEN.

A.—Aaron, Abel, Abraham, Absalom, Adam, Adolphus, Adrian, Alan, Albert, Alexander, Alfred, Algernon, Alphonso, Ambrose, Amos, Ananias, Andrew, Anslem, Anthony, Archibald, Arnold, Arthur, Athanasius, Augustin, Austin, Azariah.

B.—Baptist, Barnaby, Bartholomew, Basil, Bede, Benjamin, Bennet, Bernard, Blase, Bonaventure, Boniface, Brian.

C.—Cadwallader, Cæsar, Caleb, Cecil, Charles, Christopher, Chrysostom, Claudius, Clement, Conrade, Constantine, Cornelius, Crispin, Cuthbert, Cyprian, Cyril.

D.—Daniel, David, Demetrius, Denis, Dyonisius, Dominic, Dunstan.

E.—Edgar, Edmund, Edward, Edwin, Egbert, Eleazar, Eldred, Elias, Elisha, Emanuel, Enoch, Ephraim, Erasmus, Ernest, Esaias, Esau, Ethelbert, Ethelred, Ethelwald, Evan, Everard, Eugene, Eusebius, Eustace, Ezekiel, Ezra.

F.—Fabian, Felix, Ferdinand, Fortunatus, Francis, Frederick.

G.—Gabriel, Geoffrey, George, Gerard, Germain, Gervase, Gideon, Gilbert, Giles, Godard, Godfrey, Gregory, Guy.

H.—Harold, Henry, Herbert, Hercules, Hezekiah, Hierom, Hillary, Horatio, Howel, Hubert, Hugh, Humphrey.

J.—Jabesh, Jacob, James, Jasper, Jeffery, Jeremy, Job, Joel, John, Jonah, Jonas, Jonathan, Joscelin, Joseph, Josias, Joshua, Isaac, Jude, Julian, Julius, Justus.

K.—Kenard, Kenelem, Kester.

L.—Lambert, Launcelot, Lawrence, Lazarus, Leolin, Leonard, Leopold, Llewellin, Lewis, Lionel, Lucius, Luke.

M.—Malachi, Mark, Marmaduke, Martin, Matthew, Matthias, Maurice, Maximilian, Meredith, Merric, Michael, Miles, Morgan, Moses.

N.—Nathan, Nathaniel, Napoleon, Neal, Nehemiah, Nestor, Nicholas, Noel, Norman.

O.—Obadiah, Oliver, Orlando, Osmund, Oswald, Orto, Owen.

P.—Paschal, Patrick, Paul, Percival, Peregrine, Peter, Philip, Phinehas, Posthumus.

Q.—Quintin.

R.—Ralph, Randal, Randolph, Raymond, Reuben, Reynold, Rice, Richard, Robert, Roger, Rowland, Rupert.

S.—Samson, Samuel, Saul, Sebastian, Seth, Shadrach, Sigismund, Silvester, Simeon, Solomon, Stephen, Swithin.

T.—Theobald, Theodore, Theodosius, Theodoret, Theodoric, Theophilus, Thomas, Timothy, Titus, Tobias, Tobit, Tristram.

V.—Valentine, Vincent, Urban, Uriah.

W.—Walter, William.

Z.—Zaccheus, Zachary, Zadoch, Zedekiah.

NAMES OF WOMEN.

A.—Abigail, Agatha, Agnes, Alethea, Alice, Amy, Ann or Anne, Annis, Arabella, Avice.

B.—Barbara, Bathsheba, Beatrice, Bella, Benigma, Bertha, Blanch, Bona, Bridget.

C.—Caroline, Catharine, Charity, Charlotte, Christiana, Cicely, Clare, Clarissa, Clementina, Constance.

D.—Damáris, Deborah, Diana, Dido, Dinah, Diona, Dorcas, Dorothy, Drusilla.

E.—Edith, Eleanor, Eliza, Elizabeth, Emma, Easter, Eve, Eunice.

F.—Faith, Felicia, Flora, Florence, Fortune, Frances.

G.—Gertrude, Gilian, Grace.

H.—Hagar, Hannah, Harriot, Helen, Hester.

J.—Jane, Jacquet, Jemima, Jennet, Jean, Josephine, Joyse, Isabel, Judith, Julia.

K.—Katharine.

L.—Leah, Leonora, Lettice, Love, Lucretia, Lucy, Lydia.

M.—Mabel, Magdalene, Margaret, Margery, Martha, Mary, Maud, Matilda, Melicent, Mercy, Mildred.

N.—Nancy, Nanny, Naomi.

P.—Patience, Penelope, Philippa, Phœbe, Phillis, Priscilla, Prudence.

R.—Rachel, Rebecca, Rhoda, Rosamond, Rose, Ruth.

S.—Sabina, Sabrin, Salome, Sarah, Sophia, Stella, Susannah.

T.—Tabitha, Temperance, Thomasin.

U.—Ursula. W.—Winifred.

THE

COMPLETE GARDENER;

OR,

The Practice of Gardening in all its Branches, for the twelve Months in the Year.

JANUARY.

Pleasure Garden.

Frost is to be expected now, and nothing is so dangerous to tender flower-roots and their shoots for spring.

Ranunculuses, anemonies, and tulips, will be in danger: cover the beds to guard them; lay on pease-straw, where they are not come up; but where the shoot appears, place hoops with mats and cloths upon them. This is the common practice; but in that excellent work, *The Complete Body of Gardening*, lately published, there is a new method proposed, and much easier and better. This is, to place behind them a reed hedge, sloping three feet for-

ward. A mat is to be let down from the top in severe weather and taken up in mild. This certainly preserves them, and yet does not draw them weak, or make them tender.

Cover the beds and boxes of seedling flowers; and take off the defence when the weather is mild.

Clean the auricula plants, pluck off dead leaves, and scrape away the surface of the mould; put fresh mould in the place of it, and set the pots up to the brim in the mould of a dry bed, and place behind them a reed hedge. Cover carnation plants from wet, and defend them from mice and sparrows.

Kitchen Garden.

Throw up some new dung in a heap to heat, that it may be ready to make hot-beds both for the early cucumbers and melons in this part of the ground, and for raising seed of annuals in the flower-garden. Dig up the ground which is to be sown with the spring crops, that it may lay and mellow.

Nurse the cauliflower plants kept under glasses; carefully shut out the frost, but in the middle of milder days let in a little air; pick up the dead leaves, and gather up the mould about the stalks. Make a slight hot-bed in the open ground, for young salading, and place hoops over it, that it may be covered in very hard weather. Plant out endive for seed into warm borders; earth and blanch celery. Sow a few beans and pease, and seek and destroy snails and other vermin.

Orchard and Fruit Garden.

Fruit trees, whether in orchards or espaliers, or against walls, demand the same general management. Cut out dead wood and irregular branches; clean the stumps and bows from moss with a hollow iron; and repair espaliers, fastening the stakes and poles with nails and wire, and tying the shoots down with twigs of ozier.

Place stakes by all new-planted trees; cut grafts to be ready, and lay them in the earth under a warm wall.

FEBRUARY.

Pleasure Garden.

Make hot-beds for annual flowers with the dung laid up for that purpose, and sow them upon a good thickness of mould, laid regular over the dung.

Transplant perennial flowers and hardy shrubs, Canterbury bells, lilacs, and the like. Break up and new-lay the gravel-walks. Weed, rake, and clean, the borders; and where the box of the edging is decayed, make it up with a fresh plantation.

Sow auricula and polyanthus seeds in boxes: these should be made of rough boards six inches deep, with holes at the bottom for the running off the water: they must be filled with light mould, and the seeds scattered thinly over the surface; then some more mould must be sifted over them a quarter of an inch thick, and they must be set where they may enjoy the morning sun.

Kitchen Garden.

Dig and level beds for sowing raddishes and onions, carrots and parsnips; and Dutch lettuce, leeks, and spinnage, should also be sown now; also beets, cellery, sorrel, and marigolds, with any other of the hardy kinds.

Make up the hot-beds for early cucumbers, and sow cauliflower seeds, and some others.

Plant beans, and sow pease: the best way, in these useful things, is to sow a new crop every fortnight, and if one succeeds, and another fails, as will often be the case there may still be a constant supply, at the due season, for the table. Plant kidney-beans upon a hot-bed for an early crop. The dwarf, white, and Battersea beans, are the best sorts. They must have air in the middle of mild days when they are up, and once in two days they must be gently watered.

Transplant cabbages, plant out Silesia and Cos lettuce from the beds where they grew in winter; and plant potatoes and Jerusalem artichokes.

Orchard and Fruit Garden.

Most kind of trees may now be pruned, though it is better to do it to the generality in autumn: whatever has been omitted at that season, in this article, must be done now; the hardiest kinds being pruned first, and such as are more tender at the latter end of the month, when there will be little danger of their suffering from the frosts in the wounded part.

Transplant fruit-trees to places where they are wanted; opening a large hole, settling the earth carefully about their roots, and nailing them at once to the wall, or fastening them up to strong stakes. Nail up the tender trees with care, and uncover the fig-trees by degrees which have been protected from frost by mats. Sow the kernels of apples and pears, and the stones of plums for stocks, and keep off birds that eat the buds of fruit-trees.

Vines, wall, espalier, and standard fruit-trees, forest-trees, and deciduous shrubs, if the season prove mild, may now be planted.

MARCH.

Pleasure Garden.

Watch the beds of tender flowers, and throw mats over them, supported by hoops in hard weather.

Continue transplanting all the hardy perennial fibrous-rooted flowers, sweet-williams, golden-rods, and the like.

Dig up the earth with a shovel about those which were planted in autumn, and clean the ground between them.

All the pots of flowering plants must now be dressed. Pick off dead leaves, remove the earth at the top, and put fresh in the place, then give them a gentle watering, and set them in their

places for flowering. In doing this, take care the roots are not wounded, and repeat the watering once in three days.

The third week in March is the time to sow sweet-pease, poppies, catch-flies, and all the hardy annual plants.

The last week is proper for transplanting evergreens; and for this purpose a showery day should be chosen. New hot-beds must be made to receive the seedlings of annual flowers raised in the former.

Kitchen Garden.

Sow in the beds of the kitchen garden some carrots, and also the large pease, rouncevals and gray.

In better ground sow cabbages and savoys, also carrots and parsnips for a second crop, and towards the end of the month put in a large parcel of beans and pease.

Sow Cos and Imperial lettuce, and transplant the finer kinds.

Sow parsley, and plant mint.

In the beginning of the month sow Dutch parsley for the roots.

The last week take the advantage of time, or the dry days, and make asparagus beds.

Clear up the artichoke roots, slip off the weakest, and plant them out for a new crop, leaving four from each good root to bear; and from such as are weaker two.

Dig up a warm border, and sow some French beans: let them have a dry soil, and give them no water till they appear.

Orchard and Fruit Garden.

The grafts which were cut off early, and laid in the ground to be ready for use, are now to be brought into service; those of the earliest kinds are to be used first, and the apple last of all.

This done, let the gardener look to the stocks that were inoculated the last year, and take off their heads. A hand's breadth should be left on above the place: this holds the bud secure by tying to it, and the sap rises more freely for its nourishment.

The fruit-trees that were planted last October must be headed; and they should be cut down to almost four eyes. Some leave only three, but four is much better; the sap rises more freely.

APRIL.

Pleasure Garden.

As this month is the opening of spring, rake and clean all parts neatly. Turf should now be laid, and edgings of the borders put in order.

Tie up some stalks of tall flowers to sticks; cut these two feet long, thrust them eight inches into the ground, and let them be hid among the leaves.

Clean and rake the ground between them.

Take off the slips of auriculas, and plant them out carefully for an increase. Transplant perennial flowers and evergreens, as in

the former months; and take up the roots of colchicams, and other autumnal bulbous plants.

Sow French honeysuckles, wall-flowers, and other hardy plants, upon the natural ground; and the tender kinds on hot-beds. Transplant those sown last month into the second hot-bed. Plant some tuberose in a moderate hot-bed, and sow carnations and pinks on the natural ground or open borders.

Kitchen Garden.

Plant a large crop of French beans; and choose for them a dry warm border. Plant cuttings of sage, and other aromatic plants. Sow marrowfat pease, and plant some beans for a late crop.

Sow thyme, sweet marjoram, and savory. Pick out celery, and plants of every kind when fit.

Prepare dung for making ridges to receive the cucumber and melon plants, designed for bell or hand glasses.

Sow young salading once in ten days; and sow some Cos and Silesia lettuces.

The seeds of all kinds being in the ground, look to the growing crops, clear away the weeds every where among them, and dig up the earth between the rows of beans, pease, and all other kinds that are planted at distances. This gives them a strong growth, and brings them much sooner to perfection, than can be done by any other method.

Draw up the mould to the stalks of the cabbages and cauliflower plants; and in cold nights cover the glasses over the early cucumbers and melons.

Orchard and Fruit Garden.

Look to the fruit-trees against the walls and espaliers. Take off all foreright shoots, and train such as rise kindly.

Thin apricots upon the trees, for there are usually many more than can ripen; and the sooner this is done, the better the others succeed.

Water new-planted trees.

Plant cuttings of vines, and look over the grown ones. Nip off improper shoots. When two rise from the same eye, always take off the weakest.

Weed strawberry-beds; cut off the strings; stir the earth between them; and once in three days water them.

Dig up the earth in the borders near fruit-trees. Never plant any large kind of flowers or kitchen things upon them; and it is better if nothing be sown or planted on these borders, as they all starve their fruit.

MAY.

Pleasure Garden.

Observe, when the leaves of sow-breads are decayed, take up the roots, laying them carefully by till the time of planting

Take up the hyacinth-roots which have done flowering, and lay them sideways in a bed of dry rich mould, leaving the stems and leaves out to die away; this practice greatly strengthens the roots.

Roll the gravel-walks carefully and frequently, and keep the grass clean mowed.

Clean all the borders from weeds; take off all straggling branches from the large flowering plants, and train them up in a handsome shape.

Plant out French and African marigolds, with other autumnals, from the hot-beds, the last week of this month, choosing a cloudy warm day.

Tie up the stalks of carnations. Plant cuttings of the lychnis and lychnideas, and sow the small annuals, candy-tuft, and Venus' looking-glass, in the open ground.

Pot the tender annuals, as balsams, amaranths, and the like, and set them in a hot-bed frame till summer is more advanced for planting them in the open ground.

Kitchen Garden.

Water once in two days the pease, beans, and other large-growing plants.

Destroy the weeds in all parts of the ground, and dig up the earth between the rows, and about the stems of all larger kinds; and earth-up the potatoes, pease, beans, cabbages, celery, &c.

Thin all sorts of seedling crops.

Sow small salading once in ten days, as in the former month; and at the same time choose a warm border, and sow some purslain; sow also endive, and plant some beans and pease for a very large crop, and French beans to succeed the others. The great care in these kinds, is to have these several products fresh and young throughout the season.

Choose a moist day, and an hour before sun-set plant out some savoys, cabbages, and red cabbages; draw the earth carefully up to their stems, and give them a few careful waterings.

Propagate herbs, culinary and medicinal, by slips and cuttings, but rather the latter. For sage it is now the best time.

Orchard and Fruit Garden.

If any fresh shoots have sprouted upon the fruit-trees in espaliers, or against walls, nip them off, and train the proper ones to the wall or poles, at due distances, and in a regular manner.

Look over vines, and stop every shoot that has fruit upon it, to three eyes beyond the fruit. Then train the branches regularly to the wall, and let such as are designed for the next year's fruiting grow some time longer; their leaves will give a proper shade to the fruit.

Water the new-planted trees, and keep the borders about the old ones clear; and, finally, pick off snails and other vermin.

Trees and shrubs may yet succeed by good management; but the chance will be against them.

JUNE.

Pleasure Garden.

Choose the evening of a mild showery day, and plant out into the open ground the tender annuals hitherto kept in pots in the hot-bed frame; they must be carefully loosened from the sides of the pot, and shaken out with all the mould about them: a large hole must be opened for each; they must be placed upright in it, and, when settled in the ground by a gentle watering, must be tied up to sticks.

Let pinks, carnations, and sweet-williams, be laid this month for an increase. Let the layers be covered lightly, and watered every other day a little at a time.

The spring flowers being now over, and their leaves faded, the roots must be taken up, and laid by for planting again at a proper season. Snow-drops, winter-aconite, and the like, are to be thus managed.

The hyacinth roots, laid flat on the ground, must now be taken up, the dead leaves nipped off, and the mould; and, when clean, they must be laid upon a mat in an airy room to harden, and then laid by.

Tulip roots must now be taken up also as the leaves decay; and the like method must be followed with anemonies and ranunculuses.

Cut the cups or pods of the carnations that are near blowing, in three or four places, that they may blow regularly.

Inoculate some of the fine kind of roses.

Kitchen Garden.

Transplant the cauliflower plants sown in May. Give them a rich bed, and frequent waterings.

Plant out thyme and other savoury plants sown before, and in the same manner shade and water them. Plant also cucumbers and melons, capsicums, leeks, and celery.

Take the advantage of some cloudy weather to sow turnips; and if there be no showers, water the ground once in two days.

Sow brocoli upon a rich warm border, and plant out celery for blanching. This must be planted in trenches a foot and a half deep, and the plants must be set half a foot asunder in the rows.

Endives should also be planted out for blanching; but in this the plants should be set fifteen inches asunder, and at the same time some endive seed must be sown for a second crop. Pick up snails; and in the damp evenings kill the naked slugs.

Moist weather at this season is very advantageous for pricking out, or planting, esculent vegetables; and it must not be neglected when it occurs.

Orchard and Fruit Garden.

Repeat the taking off foreright shoots upon wall and espalier trees, which we directed last month. Train proper branches to

their situation, where they are wanted; once again thin the wall-fruit; leave nectarines at four inches distance, and the peaches at five, none nearer; the fruit will be finer, and the tree stronger for next year.

Inoculate the apricots, and choose for this operation a cloudy evening. Water new-planted trees, and pick up snails and vermin.

JULY.

Pleasure Garden.

Roll the gravel frequently, and mow the grass.

Clip box edgings; cut and trim hedges, and look over all the borders; clearing them from weeds, and stirring up the mould between the plants.

Inoculate roses and jessamines of all kinds that require this propagation; and any of the other flowering shrubs.

Take up the roots of fritillaries and maragons, and others of this sort that are past flowering some time.

Gather the seeds of flowers you design to propagate, and lay them upon a shelf in an airy room in the pods. When they are well hardened, tie them up in paper bags, and do not take them out of the pods till they are to be sown.

Lay pinks and sweet-williams, as the former, in earth.

Cut down the stalks of those plants which have done flowering, which you do not keep for seed; and tie up those now coming into flower to sticks, as we have directed for the earlier kinds.

Sow lupins, larkspurs, and the like, on dry warm borders, to stand the winter, and flower early next year.

Kitchen Garden.

Sow a crop of French beans to come in late, when they will be very acceptable; as also brocoli and endive.

Clear all the grounds from weeds.

Dig between the rows of beans and pease; hoe the ground also about the artichokes among the cabbage kind.

Water the crops in dry weather; also cucumbers more freely.

Spinnage-seed will be ready for gathering now, as also that of the Welsh onion, and some others; take them carefully off, and dry them in the shade.

Take up large onions, and spread them upon mats to dry for the winter.

Stick pease, and running kidney-beans, according to their age. Thin all small crops to their due distances.

Gather seeds as they ripen, lest the best be lost; and herbs for drying gather as soon as in flower.

Plant celery at six inches: leeks the same; endive, lettuces, coleworths, cabbages, savoys, brocoli, boor-cole, and cauliflowers at two feet or more in a rich soil.

Orchard and Fruit Garden.

Inoculate peaches and nectarines.

Take off all foreright shoots in the espalier and wall-fruit trees.

Hang phials of honey and water upon the fruit-trees, and look carefully for snails. Keep the borders where the fruit-trees stand clear from weeds, and stir the earth about them. This will greatly assist the fruit in ripening.

Look to the fruit-trees that have been grafted and budded the last season. See that there are no shoots from the stocks. Whenever they rise take them off, for they will rob the intended growth of its nourishment.

Look carefully to the new-planted trees, water them often; and whatever shoots they properly make, fasten to the wall or espalier.

Repeat the care of the vines, take off improper shoots, and nail any that are loose to the wall. Let no weeds rise in the ground about them, for they will exhaust the nourishment, and impoverish the fruit.

AUGUST.

Pleasure Garden.

See whether the layers of sweet-williams, carnations, and the like, be rooted; transplant such as are, and give frequent gentle waterings to the others to promote it.

Dig up a mellow border, and draw lines of five inches distance lengthwise and across: in the centre of these squares plant the seedling polyanthuses, one in each square.

In the same manner plant out the seedling auriculas. Shade them till they have taken root, and water them once in twenty-four hours.

Cut down the stalks of plants that have done flowering. Save the seeds you want as they ripen.

Water the tender annuals every evening.

Sow anemonies and ranunculuses, as also fritillary, tulip, and narcissus seed.

Dig up a border for early tulip-roots, and others for hyacinths, anemonies, and ranunculuses. Sow annuals to stand through the winter, and shift auriculas into fresh pots.

Kitchen Garden.

Sow some spinnage upon a rich border, and on such another sow onions. Those two crops will live through the winter, unless very severe, and be valuable in the spring. The second week in August sow cabbage-seed of the early kinds; and a week after that sow some cauliflower-seed. This will afford the plants that are to be nursed up under bed-glasses in the winter. Some of these may also be ventured in a very well defended situation open. The last week of this month sow another crop, to

supply the place of these in case of accidents; for if the season be very severe, they may be lost; and if very mild, they will run to seed in spring. These last crops must be defended by a hot-bed frame, and they will stand out, and supply deficiencies.

Sow lettuces, the cabbage and brown Dutch kinds, in a warm and well-sheltered piece of ground.

Transplant some of the lettuces sown earlier in warm and well-sheltered borders.

Take up garlic, and spread it on a mat to harden: in the same manner take up onions and rocambole; and, at the latter end of the same month, shalots.

Plant leeks, celery, endive, &c. &c. as last month.

Orchard and Fruit Garden.

Watch the fruit on your wall-trees, and keep off devourers, of which there are numberless kinds now swarming about them. Shoot all birds, pick up snails, and hang bottles of sweet water for flies and wasps.

Fasten loose branches; and gather the fruit carefully as it ripens, before the sun has shone long upon it.

Once more go round the vines, and pull off those trailing branches, so very luxuriantly produced at this time. See that the fruit is not shaded by loose branches, and keep their borders clear of the weeds. This tends more than is imagined to the well ripening of the fruit.

Propagate trees and shrubs, by laying young shoots in fine rich earth, and keep the ground clean about them.

SEPTEMBER.

Pleasure Garden.

A new kind of work begins this month; which is, preparing for the next season. Tear up the annuals that have done flowering, and cut down such perennials as are past their beauty; bring in other perennials from the nursery beds, and plant them with care at regular distances.

Take up the box-edgings where they have outgrown their proper size, and part and plant them afresh.

Plant tulip and other flower-roots.

Slip polyanthuses, and place them in rich shady borders. Sow the seeds of flower-de-luces and crown-imperial, as also of auriculas and polyanthuses, according to the method we delivered before.

Also part off the roots of flower-de-luces, piony, and others of these kinds. In the last week transplant hardy flowering-shrubs, and they will be strong next summer.

Kitchen Garden.

Sow lettuces of various kinds, Silesia, Cos, and Dutch; and when they come up shelter them carefully. The common prac-

tice is to shelter them under hand-glasses; but they will thrive better under a sloping reed hedge, such as we described before.

Make up fresh warm beds with the dung that has lain a month in the heap. Plant the spawn in these beds upon pasture mould, the same they were found in; and raise the top of the bed to the ridge, to throw off wet.

Look to the turnip-beds, and thin them; leave the turnips at six inches distance.

Weed the spinage, onions, and other new-sown plants.

Transplant sage, lavender, and sweet plants. Earth up the celery as it grows up in height.

Sow young salading upon warm and well-sheltered borders.

Clean asparagus beds in this manner: Cut down the stalks, and pare the earth off the surface of the alleys; throw this upon the beds half an inch thick, and sprinkle over it a little dung from an old melon bed.

Dig up the ground where the summer crops have ripened; and lay it in ridges for the winter. These should be disposed east and west, and turned once in two months: they have thus the advantage of a fallow.

Plant some beans, and sow some pease on warm and well-sheltered borders, to stand out the winter; also Brussels sprouts, choumilan, and celery; and lettuces on dry warm ground.

Orchard and Fruit Garden.

The fruit must now be gathered with care every day, and the best time is an hour after sun-rise. Then it should be laid in a cool place till used. Such as is gathered in the middle of the day is always flabby.

Keep birds from the grapes, for as they now begin to ripen, they will be in continual danger.

Transplant gooseberries and currants, and plant strawberries and raspberries: they will be rooted before winter, and flourish the succeeding season.

OCTOBER.

Pleasure Garden.

Let all the bulbous roots for spring-flowering be put into the ground. Narcissus, maragon, tulips, and such ranunculuses and anemonies as were not planted sooner.

Transplant columbines, monkshood, and all kinds of fibrous-rooted perennials.

Place the auriculas and carnations, that are in pots, under shelter.

Some lay the pots on one side, but that spoils the bud for next year's flowering. The best way is by means of a sloping reed-hedge. Dig up a dry border, and if not dry enough naturally,

dig in some sand. In this set the pots up to the brim. Place the reed-hedge sloping behind them, and fasten a mat to its top that it may be let down in bad weather.

Take off the dead leaves of the auriculas before they are thus planted.

Bring into the garden flowering shrubs whenever they are wanted, and at the end of the month prune some of the hardier kinds.

Propagate, by layers of the young wood, roses, jessamines, bay, laurel, and laurustinus; by cuttings or slips, gooseberries, currants, honeysuckles, barberry, box, &c.

Kitchen Garden.

Plant out the cauliflower plants where they are to be sheltered; and it will be proper to plant two for each glass, where that method is used, for fear of one failing.

Sow another crop of pease, and plant more beans; choose for these a dry spot, and well sheltered from the cold wind of winter.

Transplant the lettuces sown last month, where they can be defended by a reed-hedge, or under walls.

Transplant cabbage plants and coleworts, where they are to remain.

Take great care of the cauliflower plants sown early in summer: they now begin to shew their heads; so break in the leaves upon them, to keep off the sun and rain; it will both harden and whiten them.

Orchard and Fruit Garden.

Prune the peach and nectarine trees, and the vines. This is a very useful practice, for it strengthens the buds for spring.

Cut grapes for preserving, with a joint of the vine to each bunch.

Gather fruits for winter-keeping as they ripen. Transplant all garden trees for flowering; prune currant bushes, and preserve the stones of the fruit for sowing.

NOVEMBER.

Pleasure Garden.

Throw together a good heap of pasture ground, with the turf among it, to rot for mould on the borders.

Transplant honeysuckles and spireas, with other hardy flowering shrubs.

Rake over the beds of the seedling flowers, and strew some pease-straw over them to keep out the frost.

Cut down the stems of perennials which have done flowering; pull up annuals that are spent, and rake and clear the ground.

Place hoops over the beds of ranunculuses and anemonies, and lay mats or cloths in readiness to draw over them, in case of hard rains or frost.

Clean up the borders in all parts of the garden, and take care to destroy not only the weeds, but all kinds of moss.

Look over the seeds of those flowers which were gathered in summer. See they keep dry and sweet, and in a condition of growth, and dig a border or two for the hardier kinds.

Kitchen Garden.

Weed the crops of spinage, and such other kinds as were sown late, for the wild growth will else smother and starve the crop.

Dig up a border under a warm wall, and sow some carrots for spring; sow raddishes in such another place, and see the ground be well and deep dug for both. Turn the mould that was trenched and laid up for fallowing: this destroys weeds, and prepares the soil to be enriched by the air.

Prepare some hot-beds for salading; cover them five inches with mould, and sow upon them some lettuces, and the common small salading, mustard, rape, cresses, and raddish.

Plant another crop of beans, and sow more pease for a succession.

Trench the ground between the artichokes, and throw a thick ridge of earth over the roots. This will preserve them from the frost, and prevent their shooting at an improper time.

Make a hot-bed for forced asparagus.

Take up carrots and parsnips, and lay them in sand to be ready for use. Give air at times to the plants under hand-glasses and in hot-beds, or they will suffer as much by want of that, as they would have done by the frost.

Orchard and Fruit Garden.

Stake up all the trees planted for standards, or the winds will rock them at the bottom, and the frost will be let in and destroy them.

Throw a good quantity of pease-straw about them, and lay on it a good number of brick-bats or pebbles, to keep it fast; this will mellow the ground, and keep out the frost.

Continue to prune wall-fruit trees, and prune at this time also the apple and pear kinds. Pull off the late fruit of figs, as it would decay and rot the branches.

DECEMBER.

Though the garden is now no longer a decorated scene, yet it affords many things of promise which demand attention; and which the industrious gardener will sedulously forward for the coming year. In order to this, guard against frost by every possible means. All vacant ground clear, dung, rough-dig, or trench. Hot-beds prepare, and manage the materials for; and composts incorporate well, by turning over.

Pleasure Garden.

Draw the mats and cloths over the ranunculuses and anemony

beds in severe weather, whether frost or cold rain; but give them air in the middle of every tolerable day, and as soon as possible uncover them all day; but draw on the mats against night.

Throw up the earth where the flowering shrubs are to be planted in spring; and once in a fortnight turn it.

Dig up the borders that are to have flower-roots planted in them in the spring, and give them the advantage of a fallow, by throwing up the ground in a ridge.

Scatter over it a very little rotten dung from a melon-bed, and after this turn it twice during the winter.

Look over the flowering-shrubs, and prune them. Cut away all the dead wood, shorten luxuriant branches, and if any cross each other, take away one. Leave them so that the air can have free passage between them.

Sift a quarter of an inch of good fresh mould over the roots of perennial flowers, whose stalks have been cut down, and then rake over the borders. This will give the whole an air of culture and good management, which is always pleasing.

Kitchen Garden.

Plant cabbages and savoys for seed. This is to be done with great care: dig up a dry border, and break the mould very well; then take up some of the stoutest cabbage and savoy plants; hang them up by the stalks five days, and then plant them half-way of the stalks into the ground, draw up a good quantity of the mould about the part of the stalk that is out of the ground, and make it into a kind of hill round each; then leave them to nature.

Sow another crop of pease, and plant another parcel of beans, to take their chance for succeeding the others.

Make another hot-bed for asparagus, to yield a supply when the former is exhausted. Continue to earth up celery, and cover some endive with a good quantity of pease-straw, as it is growing, that you may take up when wanted, which otherwise the frost will prevent.

Orchard and Fruit Garden.

Prepare for planting trees where they will be wanted in spring, by digging the ground deep, and turning it well now in the places where they are to stand.

Scatter over the borders, where the fruit-trees are planted, some fresh mould, and some old dung, and in a mild day dig it with a strong three-pronged fork.

Look over the orchard trees, and cut away superfluous and dead wood. Let the branches stand clear of one another, that the air may get between, and the fruit will be better flavoured.

This is the management of old trees; and new-planted ones are to be preserved by covering the ground at their roots.

Drain the wet from the orchard, as well as from the garden and nursery, &c.

USEFUL MEMORANDUMS

PROPER TO BE KNOWN.

A ream of paper, 20 quires.
A quire of paper, 24 sheets.
A bale of paper, 10 reams.
A roll of parchment, 5 dozen, or 60 skins.
A dicker of hides, 10 skins.
Ditto of gloves, 10 dozen pair.
A last of hides, 12 dozen; of leather, 20 dickers.
A load of timber unhewed, 40 feet.
A chaldron of coals, 36 bushels.
A hogshead of wine, 63 gallons.
Ditto of beer, 54 gallons.
A barrel of beer, 36 gallons.
Ditto of ale, 32 gallons.
Ditto of flour, 196 pounds.
A gross, 144, or 12 dozen.
A wey of cheese, 256 pounds.
Days in the year, 365; weeks, 52; and hours, 8766.
Pence in the pound, 240; farthings, 960.
An acre of land, 160 square poles or perches.
A last of corn or rape-seed, 10 quarters.
A quarter in England, 8 bushels; in Scotland, 4 bolls.
A last of pot-ashes, cod-fish, white-herrings, or meal, 12 barrels; pitch and tar, 14 barrels.
Ditto of flax and feathers, 1700lb.; of gunpowder, 24 barrels, or 2400lb.; of wool, 12 sacks.
A tun of wine, 252 gallons; oil of Greenland, 252 gallons; and sweet oil of Genoa, 236 gallons.
A ton in weight, 20 cwt. of iron, &c.; but of lead, there is only 19½ cwt. called a fodder or fother.
A tod of wool, 28 pounds.
A pack of ditto, 364 pounds.
A load of bricks, 500; and of plain tiles, 1000.
A stone of fish, 8lb.; and of wool, 14lb. The same for horseman's weight, and also hay; but pepper, cinnamon, and alum, have but 13½lb. to the stone.
Ditto of glass, 5lb.; and a seam of ditto, 24 stone.
A truss of hay, 56lb.; and a load of ditto, 39 trusses.
Note, New hay in June and August, ought to be 60lb. to the truss, as per statute of 2d of William and Mary, 1693.
A cade of red-herrings, 500; and of sprats, 1000; iron and shot, 14lb. to the stone.

A peck of salt is 14lb.
A stone of cheese, 16lb.
A firkin of soap, 64lb.
A firkin of butter, 56lb.

	lb.	*oz.*	*dr.*
A peck loaf is - - -	17	6	1
Half do. - - - - -	8	11	$0\frac{1}{2}$
Quartern do. - - -	4	5	$8\frac{1}{4}$
A peck of flour - - -	14	0	0

Barrels of sundry Commodities.

Anchovies, 30lb.
A double barrel, 60lb.
Nuts or apples, 3 bushels
Pot-ash or barilla, 200lb.
White or black plates, 300
Candles, 10 dozen pounds
Salmon or eels, 42 gallons
Figs, 3 qrs. 14lb. to $2\frac{1}{4}$cwt.
Raisins, 1 cwt.
Oil, 31 gallons and a half
Spanish tobacco, 2 Ct. to 3 Ct.
Gunpowder, 1 cwt.
Soap, 240lb.
Butter, 224lb.
Herrings, 32 gallons.

Things in Wholesale Trade, bought and sold by the Thousand.

Cuttle bones
Oranges and lemons
Chair nails
Tacks and tenter hooks
Pomegranates and teazels
Goose quills and thimbles
Bricks
Clinkers, or Flanders tiles
Billets and leaves of horn
Barrel hoops
Squirrel skins
Slate and hilling stones

Pins and small needles by the thousand dozen.

Things bought and sold at Six Score to the Hundred.

Banks and barlings
Barrel and pipe boards
Bompspars and bow staves
Canspars and caprevans
Herrings and deal boards
Nails, eggs, and cod-fish
Cele, ling, and Newfoundland fish; stock-fish of all sorts
Ells of canvass, and most foreign linens
Hogshead staves.

☞ By an Act passed in the 5th year of His Majesty George IV. the Pound avoirdupois is to contain 7000 Troy grains: the Gallon, 10 such pounds of distilled water. This Gallon to be the standard measure from which all other measures shall be used, as well for wine, beer, ale, spirits, and all sorts of liquids, as for dry measure. The Quart shall be the fourth of this standard gallon, the Pint the eighth part; two such gallons shall be a Peck, eight gallons a Bushel, and eight bushels a Quarter of corn, or other dry goods not measured by heaped measure. The goods sold by heaped measure, to be heaped up in the form of a cone to the height of at least six inches in such bushel, which is to be round, and nineteen inches and a half from outside to outside. Three such bushels to be a Sack, and twelve sacks a Chaldron. This Act came into operation on the first of January, 1826.

RELIGION.

THEOLOGICAL QUESTIONS.

A DIALOGUE
BETWEEN
TYRO, a Learner, and PHILO, his Instructor.

Tyr. What is theology?

Phil. Theology signifies divinity, and is that science, whose doctrine treats of, and instructs us in, the knowledge of God, and the practice of true religion. Theology may be divided into three parts, viz. Natural, supernatural, and moral.

Tyr. What do you mean by natural theology?

Phil. Natural theology is that which treats of the existence of God, and the works of creation, as far as is discovered by the light of nature.

Tyr. What is supernatural theology?

Phil. Supernatural theology is the will of God communicated or revealed to mankind by revelation, by which we not only know more of God than by natural reason we could possibly do, but are more particularly bound by obligation to perform our duty to him as a lawgiver; he having revealed such things to us that never could have been discovered by all the natural reason of man, nor even by the conception of angels. But I will not prevent you, Tyro, at present, as I shall give you a fuller account of this by and by; therefore, I pray, go on in your inquiry.

Tyr. What is moral theology?

Phil. Moral theology is that which instructs us in that part of the divine law, which tends to the well-being of society in general, and the more particular behaviour, carriage, duty, or deportment, to each other in particular, in the different callings, variations, and circumstances of life, either as superior, equal, or inferior. This, therefore, runs parallel with the laws of revealed religion, and comes under that head.

Tyr. I shall be obliged to you, kind Philo, to give me a fuller account of natural and supernatural religion, with respect to the different ends unto which they reasonably and obviously lead.

Phil. I will.

2. *A farther Account of the Religion of Nature.*

Tyr. Is man capable of knowing God by the light of nature or reason only?

Phil. Most certainly he is, as far as relates to the works of creation and providence. For God having created man with a power or faculty of reasoning, reflecting, and considering, man must of necessity, as it were, acknowledge, that there is certainly some first cause; and if he uses his reason, and further contemplates the works of nature, he cannot do otherwise than own and confess the existence of a God.

Tyr. But there are some persons, who either do not think at all, or else speak against their own conscience, and the very dictates of nature; else whence comes the atheist, who says, there is no God?

Phil. Though there are men so called, who have boldly denied the existence of God, yet there never were, nor are there now, so many of this description as is commonly supposed. And, in my opinion, I am unable to conceive how there can be an atheist: neither can I be persuaded that the priests, friars, &c. of the church of Rome, do themselves really believe the inconsistent doctrine of transubstantiation. For though it is very natural to suppose that every man believes that which he daily preaches and propagates, yet we often find to the contrary; for such conduct frequently arises from a deceitful and wicked custom and infatuation, to serve some worldly ends, or to favour some sinister views and designs.

Tyr. I believe what you say is true; but pray is the light of nature sufficient to convince us of the existence of a supreme Being?

Phil. Yes, in many respects, would man but follow its dictates, and consider it justly: For, 1. Nature itself, 2. The order of the heavenly bodies, 3. The power, nature, and faculties, of various animals, 4. Their adaptation for man, 5. The vegetable creation, 6. Matter itself, &c. all powerfully proclaim the existence of an almighty, all-wise, and all-powerful God.

Tyr. Very true indeed; and pray does not nature also instruct us to honour, reverence, worship, and fear, this our Creator, and do justice one to another?

Phil. Nature, no doubt, instructs us, that there is not only a divine Being who created us, but that we should also worship and adore him; but how, and in what manner, such worship and adoration are to be performed, and how men are to act in respect to God and each other, in what are now called moral acts, nature has not so particularly instructed us; and reason alone, before revealed religion, always fell short of it: for there can be no law previous to the Lawgiver; and it is absurd to suppose that one man's rules or laws should be binding to another, abstracted from the laws of their Creator, which are founded in justice and mercy.

It is therefore evident, that natural laws, built only upon natural reason, are quite different from the positive laws of the Creator himself; God having revealed his will to man, and given him laws to walk by, to the end he might glorify his Maker, by a reverential regard to those laws, and enjoy his favour and affection for ever. This nature itself has not power to do.

3. *Shewing that the supposed Laws of Nature and Reason cannot be binding without some positive Law from a superior primary Being.*

Tyr. You have already shewn me, that by the light of nature

alone men may be convinced there is a divine Being; and that if he exercises his reason, he will naturally be led to think, believe, and confess, that this Being is the greatest object of his adoration.

Phil. Very well, I have so. What then?

Tyr. Why, you puzzle me, when you said the laws of nature are not binding to us, respecting moral good and evil.

Phil. Don't mistake me, dear Tyro; when I speak of nature, or the dictates of nature only, I would be understood as follows: That natural reason itself is so far from having a positive power to regulate our actions, that unless there had been some laws or rules laid down by a lawgiver, men would have been continually striving for a mastery over each other, and involved in perpetual confusion. For nature itself teaches me, that I have an equal right to command or prescribe laws for you, as you have for me; and when you speak of the power of nature only, there can be no superiority; consequently thereby all subordination ceases, because all men must have been upon a level before some law was given. In speaking to the origin of moral good and evil, the dignity of human nature, &c. they are not to be defined by the light of nature, being abstract ideas, built only upon hypothesis, and the perpetual contradictory opinions of men, both ancient and modern, as you will see hereafter.

Tyr. You are very smart upon me, Philomathes: but pray give me leave to ask, Does not the light of nature teach us the origin of moral good and evil, and that man, being at the head of the creation, should act according to the dignity of his nature?

Phil. You ask this question with such earnestness, I cannot help smiling; because I perceive plainly that you have blended part of supernatural with natural religion; but, as I told you before, we are now speaking of all such nations, or individuals, who never had, or have yet received, any laws or superior rules, or commands, to regulate them.

Tyr. I shall be obliged to you to instruct me further on this subject; but I always thought, that man's chief happiness consisted in following the pure dictates of nature, and his own natural reason. If I am wrong, pray convince me wherein.

Phil. I will not engage to do this; but I will endeavour to prove that the dictates of nature, abstracted (as I have already related) from positive laws, never were capable of instructing us, much less of binding us to this or that particular duty; nor can it be supposed we should have known wherein our real happiness consists, had it not been for superior evidence.

Tyr. Can you prove what you assert?

Phil. Very easily; for the schoolmen themselves never knew what they meant concerning the origin of moral good and evil, nor could they define it. They could never agree rightly concerning the *summum bonum* (or chief good) itself, though in the

schools of Greece (as Varro and others affirm) there were above two hundred persons daily disputing upon, and as often disagreeing in their judgments concerning, this and many other subjects.

Tyr. What did they use to say concerning man?

Phil. They argued that man was a noble creature, that he has a penetrating judgment, a capacious understanding, and a tenacious memory, &c. and therefore, that he should act according to the dignity of his nature, and purge his soul from all impurities; and thereby become a terrestrial god, &c. But of what service is all this doctrine, suppose I was minded to act contrary to what they call the dignity of my nature?

Tyr. Why then, certainly, you would do wrong, and must render an account of your conduct, and be answerable for it.

Phil. I thought you would say so; but this proposition is absurd, and is in itself a self-evident contradiction—because nature and reason have no determined binding laws: if so, then whose governing authority have I contemned? or whose, or what law, have I broken? I cannot be guilty of a fault in disobeying a command, or breaking a law, before I knew there was a lawgiver; nor can I, by the same reason, be guilty of any moral turpitude, without breaking some law or command which I was previously enjoined, and had engaged by oath, on making one of a society, to keep and maintain.

Tyr. I must own, sir, your argument has great reason in it, and I begin to see more plainly the truth of what you first asserted. I should be glad, however, if you would instruct me further on this subject, that I may be yet more capable to support the argument myself, and instruct others.

Phil. There remains very little more to be said on this head, except it be to point out to you the difference between negative or natural laws, and positive or obligatory laws. Therefore, from what has already been said, the following axioms, or self-evident truths and observations, may easily be deduced.

AXIOM I.

No law laid down or prescribed by any one man for another to act by, without his concurrence and consent, can possibly be binding; one having the same right, by the laws of nature, as the other, to prescribe laws also to him.

AXIOM II.

Natural, inherent, and intrinsic good and evil, dignity of nature, &c. abstracted from the laws of real obligation from some superior lawgiver, are at best but words without meaning, and only chimeras of imagination, built upon nothing else but the foundation of idle fancy, and false and imperfect opinions.

AXIOM III.

Since the law of man, abstracted from some divine law, cannot be obligatory, it will naturally follow, that God, as Creator, has

an indisputable right of proprietorship; and, therefore, he not only created man fit to be ruled, and to rule, but has himself given laws, and signified to us that man must of necessity be so ruled in subordination to his will. Hence follows,

AXIOM IV.

The foundation of moral good and evil arises only from the preceptive and prohibiting will of God made known to man: God having given him laws to walk by, which tend both to his own glory and man's temporal and eternal happiness, and therefore no man has a right to attempt to compel another to assent to his particular notions, such being not only contrary to the laws of his Creator, but also a violation of the laws of right reason, and an insult offered to the understanding.

Tyr. I sincerely return you thanks, dear Philomathes, and am now fully satisfied of the truth of what you have asserted.

4. *A farther account of Supernatural Theology, by which the will of God was more particularly revealed to Man, and Man more particularly bound to believe and obey him.*

Tyr. You said that supernatural theology is the will of God, declared to mankind by revelation; I would wish to know further what you mean by revealed religion?

Phil. Revealed religion is the manifestation of the will of God, made known to man by revelation, concerning his Son Jesus Christ coming in the flesh, taking our nature upon him, dying for our sins, and rising again for our justification.

Tyr. How was this revealed to mankind?

Phil. Sometimes by vision or inspiration, and sometimes by speaking to man, as it were, personally with him, communicating not only things which are present, but those which are past, and to come; which never could have entered into the mind of man to conceive of, much less to predict the very time of such events and vicissitudes, that should happen to his own church, and to the different states and nations connected with it. The predictions of Jacob, Moses, Isaiah, and the prophets, certainly came to pass, and are plainly set forth by the apostles, who were endowed with a peculiar inspiration: and the accomplishment of the truth of their prophecies was well known to the Jews themselves, and has been acknowledged by Josephus, and many other historians of credit and veneration, living at that time.

Tyr. These things are so evident, that certainly nobody can doubt of the truth of them.

Phil. One would think so, indeed; but yet you are very much mistaken: for we have numbers of deistical persons among us, who lead their lives and conversation with due regard to all the rules of morality, and yet are captains over the armies of such as deny revelation and all revealed religion. Such persons not only

laugh at all the sacred writings of the apostles and prophets, but take a delight to ridicule those who believe them: and with a seeming surprise will tell you, that they thought you were a man of deeper sense, than to be led aside with such bugbear priest-craft stories, so contradictory to reason itself, &c.

Tyr. Why, you surprise me, Philomathes. Certainly there cannot be such a set of wretches living with the professors of Christianity!

Phil. Most certainly there are such men; and therefore all true Christians, of every sect and denomination, should be upon their guard, and should take care to furnish themselves with sufficient knowledge to withstand such dangerous and insinuating enemies.

Tyr. Very true, sir; but it is surprising to me, that persons who pretend to morality should rail against the scriptures. For no writings ever penned treat so much and so clearly of all the relative duties of king and subjects, parents and children, masters and servants, as they do; whereby alone society is maintained, and human happiness preserved; besides enforcing the obligation we are under (as you observed before) to a divine law, in discharging such duties, and the expectations of future rewards and punishments resulting from the true performance or neglect of them.

Phil. I am quite pleased, Tyro, that you have given such a full and satisfactory answer: and I heartily wish you may increase in the knowledge of these things, and continue constantly in the practice of them.

Tyr. I am obliged to you, and I hope I shall never live to see that day to be a companion with these scoffers. However, if it be agreeable to you, we will at present pass them by as unworthy our further notice or inquiry; and, therefore, I will beg leave to ask you more particularly respecting the Christian religion, as it stands at present, with the different opinions of the various sects and professors of Christianity among us.

Phil. I will give you an account of every thing as far as I can.

5. *Shewing that the Holy Scriptures teach us more of the knowledge of God, and our duty to each other, than any other system.*

Tyr. What do you mean by the word *scriptures?*

Phil. The sacred oracles of God, declared to man, and conveyed to us by the writings of certain inspired men, called prophets and apostles.

Tyr. How are the scriptures divided?

Phil. Into two parts; one called the Old, and the other the New Testament.

Tyr. What does the Old Testament chiefly set forth?

Phil. The Old Testament teaches us, 1. That there is a God. 2. That he created the heavens and the earth, and all things therein.

3. That he made man after his own image, in righteousness and true holiness. 4. That man, by his disobedience in the garden of Eden, fell from his original righteousness, and thereby rendered himself obnoxious to the divine wrath, and drew upon himself and his posterity trouble, sorrow, sickness, diseases, pain, and death. 5. That God destroyed the inhabitants of the first age of the world by a deluge of water, eight persons only excepted. 6. It tells us also, how God revealed himself to Abraham in the promised seed, out of whose loins should come forth a Redeemer to lost man. 7. It informs us that Jacob prophesied of the certain coming of this Redeemer or Messiah. 8. It shews also the laws, statutes, and ordinances, given by God to his servant Moses, for the better regulating the life and moral conduct of the Jews, and by which were signified to them, under various types and shadows, the truth of this promise made to Abraham their father, concerning Christ. 9. Here we see the binding and necessary obligation of man to God, summed up in the ten commandments given to the children of Israel. The prelude to them positively declares the existence of a God, from God's own mouth—"I am the Lord thy God." Then Moses proceeds to lay before them the will and law of God, set forth in the two tables of stone, (comprehending ten commandments,) for their further knowledge of their Creator, and the better regulating their conduct in every moral duty of honour and honesty towards each other.

1. The first positively declares there is but one God.

2. The second is a further declaration of his will concerning himself, and strictly enjoins us not only to believe and adore God alone, but that we should have such reverential regard for his very name, and such thoughts of his immensity and goodness, as not to dare to paint, carve, or form, any image, similitude, or likeness whatsoever, to represent God, much less to fall down and worship such image; for he has declared himself jealous of his attributes, and that he will not give his honour to another.

3. The third informs us, that the very name of God is so sacred, that we are never to mention it but with the highest reverence, much less to take it in vain, in swearing by it, and using it upon every light and frivolous occasion; and that such as transgress this law will not be held guiltless.

4. The fourth enjoins us to a particular observation of the sabbath, (or Sunday,) and plainly tells us, that it is God's express will that this day should be kept holy; and that we are not only to abstain from all worldly business, but to be well employed in prayer and meditation on this day. Too true it is that the sabbath is become a day of pleasure; and one fashionable sabbath-breaker has power to entice and persuade another, not only to neglect all manner of religious duty, both public and private, but

even to commit all manner of sin at home and abroad; but if God, under the law, caused a man to be put to death, only for gathering a few sticks on his holy day; what will be the punishment of those, or what can they expect, who perpetually and wilfully profane it under the gospel, I must leave to their own reflection and consideration.

5. The fifth commandment is also the positive and declarative will of God to all children, against the unnatural sin of disobedience: for herein God enjoins us not only to obey our parents in all lawful things, but likewise to honour and reverence them. And indeed the very ties of nature, and the natural obligations to the performance of this duty, are such, that (without any positive command) one would hardly expect to find so shameful a neglect of it as we daily witness; but more especially as God himself has so closely enforced, and all nations agree concerning the indispensable duty and obligation that every child lies under to perform it, without distinction of age or sex.*

6. The sixth declares God's positive command to abstain from that abominable and detestable sin of murder; and under this may be easily perceived, that all indirect means taken to destroy our own or the health of others, either by drinking, debauchery, vexations, &c. come in some measure within the limits of this command, and are a breach thereof.

7. The seventh commandment tends to promote chastity: adultery, and all uncleanness, being positively forbid by God, such acts being contrary to his nature; therefore, the more chaste and sober we are, the nearer we approach to our Creator, and deserve his love.

8. The eighth forbids very strictly the sin of theft; that we are not to rob our neighbour of his property, by stealing from his person, house, or premises, any part of his goods or effects. It also teaches us to abstain from all manner of pilfering, all frauds, monopolizings, and over-reachings.

9. The ninth commandment is not only a positive and strict charge against the sins of wilful lying, false witness, and corrupt perjury, but even against the sins of uncharitableness and detrac-

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* I would not have it thought that I mean here to dictate, or find fault with the ministers and brethren of the various sects among us. But this I may venture to say, that the subject of all relative duties has not been, nor is it yet, enforced from the pulpit so often as it should be. For I persuade myself, that were they preached upon oftener, and in a proper, impartial, and persuasive manner, they would tend much more to the peace and harmony of families, and the honour and glory of God, than dwelling upon controversial points and disputations. See bishop Patrick and bishop Fleetwood's Relative Duties, and Dr. Franklin's Sermons on the same subject.

traction. We are herein required to abstain from all sly insinuations, and speaking privately against our brethren; and we are also to take care not to give ear to any little mean tales or stories, that may prejudice our neighbour, much less to spread and propagate them at random: therefore, if mankind in general would but consider the golden rule, of *doing to others as they desire and expect to be done by*, they would discourage reports of this nature; and, by shewing a faithful and honest spirit accordingly, they might prevent a great deal of strife, which otherwise must naturally follow, when such invidious and designing persons are believed, smiled upon, caressed, and left wholly to the liberty of an ungoverned tongue, by our silence and connivance. See Ecclesiasticus, chap. xxviii. ver. 8, 9, 10, 11, &c. chap. xxi. ver. 25, 26, and 28.

10. The tenth and last commandment not only forbids the sin of covetousness, (which is more particularly construed by some, for grasping after riches,) but teaches us to bridle and restrain the inordinate passion of our desires in wishing for those goods which belong to others; to take particular care not to envy those whom Providence has thought fit to place in a more exalted station of life, but to be content and easy in our condition, faithfully discharging our duty in that state of life into which it has, or shall, please God to call us.

Thus speaks the moral laws given by God to the Jews, and is now binding to us as well as them, as is confirmed not only by the apostles, but by Christ himself, who says, *Thou shalt love the Lord thy God with all thy heart, with all thy mind, with all thy soul, and with all thy strength—and thy neighbour as thyself.* To which he further adds, saying, *On these two commandments depend all the law and the prophets.*

Tyr. What more does the Old Testament contain?

Phil. Not only the moral law, containing what we are commanded to do; but also the example of many good and wise men, whose practice and patience are lessons for us to copy, and their writings worthy our constant perusal and attention. The book of Job, the Psalms of David, the Proverbs of Solomon, and his book of Ecclesiastes, all far surpass all the writings and sayings of the ancient philosophers.

Tyr. I am of your opinion, indeed, sir.

Phil. I am glad of it, Tyro; but even these do not come up to the spirit and grandeur of many of the prophecies, particularly those of Isaiah the prophet: in which book are such sublime sentences and exhalted expressions, that it would have been impossible for any man, divested of supernatural gifts, to have done the like, much less to foretel the coming of the Lord in the flesh, and the state of the church, respecting both Jews and Gentiles, as the prophets all have done, of which the New Testament is sufficient evidence.

2. *Of the New Testament*

Tyr. What do you mean by the New Testament?

Phil. That part of the holy scriptures which were written by inspired men, after the ascension of our Lord Jesus Christ; giving a true and concise account of his birth, acts, miracles, sufferings, death, resurrection, and ascension, according to the prophecies of the old Testament, and to which they themselves are undeniable witnesses, that the same prophecies were true, and completely accomplished in him; and, therefore, are more particularly and emphatically called the Apostles of Christ.

Tyr. What does the New Testament principally teach us?

Phil. The chief and principal point of all, no doubt, is this: 1. That we should firmly believe that Jesus Christ came in the flesh. 2. That he led a holy and unspotted life, and went continually about doing good. 3. That he was crucified for our sins, and offered unto God the Father a full, perfect, and sufficient sacrifice for us. 4. That God the Father accepted this his Son as a sacrifice and atonement. 5. That he rose again the third day from the dead. 6. That this Advent is a token or confirmation of our resurrection also. 7. That he ascended into heaven, and there maketh continual intercession to God for us. And, 8. That he will come again from heaven to judge both the quick and the dead, and will render to every man according to his works done in the body, whether they be good or evil, Heb. chap. i. ver. 3. chap. 2. ver. 9, 17. chap. viii. ver. 25. St. John, chap. v. ver. 28, 29. 1 Cor. chap. xv. 2 Thess. chap. i. ver. 7, 8, 9, 10. and many other places. Thus far concerns the matter of our faith and belief. Next follows our practice.

Tyr. What does the New Testament teach us concerning our carriage and deportment.

Phil. Every thing consisting with our faith and belief; not only forbidding us to abstain from vice of all kinds, but in every part charges us to follow all Christian virtues, according to the example of him in whom we believe, and agreeable to the practice of all his apostles and true disciples.

Tyr. I confess (with shame) that since I have been grown up, I have not read and attended to so much of the scriptures as I should have done; and I own that one reason has been, I have often heard them spoken of in a very indifferent manner, viz. that they contradict one another; were only contrived to frighten mankind; and that no man in his senses can believe such marvellous, miraculous, and supernatural stories, as they contain.

Phil. I am pleased with this free and candid confession. But let me ask you one question: You say you used to read the Bible but seldom; pray tell me as frankly, upon what motive, or with what view or design, did you read, when you was disposed to look into it?

Tyr. I suppose upon the same motive as all deistical persons do, and that was, to hunt after and pick out all the seeming contradictions; which I was extremely proud to find, as I knew it would be a feather in my cap at our next meeting. But I am now convinced, and acknowledge with reverential awe, that it is the best and most valuable book in the world.

Phil. And so would many thousands more acknowledge beside you, were they to read it often, with due attention, and devoid of prejudice. And why should they not? there is a perfect harmony and agreement between the prophets of the Old, and the apostles of the New Testament, concerning the system of our redemption; and therefore it is a foolish criticism, to carp at, and cavil about, the historical part only, which is not at all material to us, and quite foreign to the most important design of those inspired writers, whose business was chiefly to proclaim the glad tidings of salvation.

Tyr. I am now very sensible of the truth and justice of your remark, Philomathes.

Phil. But that which surprises me most is, that any man, pretending to solid sense and good manners, should think he shines in wit, because he is polite enough to ridicule the scriptures. And yet numbers of these deists are great pretenders to, and great pleaders for, the performance of all the rules of moral virtue.—Reflect how unjust and inconsistent such conduct is! Can Seneca, or any of the heathen philosophers, furnish us with such moral virtues, or have any of them ever expressed themselves so beautifully and emphatically concerning prayer and praise to God, and all the relative duties of mankind to one another in every degree and station of life, as the inspired writers? Let them read Moses' constant charge to the children of Israel, the Psalms of David, the incomparable books of Proverbs and Ecclesiastes, in the Old Testament; likewise Christ's Sermon on the mount, the Epistles of St. Paul, St. John the Divine, and St. James in particular, in the New Testament; and then let them see whether all manner of vice is not forbidden, the present and future fatal consequences thereof evidently pointed out, and every social and Christian virtue highly inculcated and insisted upon. In these divine books nothing is defective. In them is set forth evidently the duty of kings,* subjects, husbands, wives, parents, children, masters, servants, and of all mankind one towards another, in all their different classes of superiority and subordination. The holy scriptures also

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* Though I have here mentioned kings before subjects, in order, yet the relative duties and obedience begin with the inferiors; that is, with the subjects, wives, children, and servants; then follow the duties of the superiors, in return, which are equally obligatory.

teach us the following virtues, viz. affability, amity, beneficence, benevolence, brotherly love, charity, chastity, compassion, courtesy, equity, fidelity, friendship, fortitude, honesty, honour, hospitality, humility, humanity, justice, liberality, loving-kindness, mercy, modesty, patience, prudence, sincerity, sobriety, and temperance. Can the enemies of these sacred writings say the contrary? Go then, whosoever thou mayest be, thou partial deist, thou pretender to the love and practice of morality—go forthwith and learn lessons out of that book which thou hast so long despised, that thou mayest escape the judgment which it pronounces against all obstinate and unrepenting scoffers of God's word.

Tyr. What you have said in the praise of the Old and New Testaments is justly founded; and I am sensible that the reason why so many rail against them, is grounded in believing the reports of others, and not investigating the foundation of them: but would they only be resolved to read these authors often, and with a spirit desiring to be improved, I might venture to say of them, as an eminent author says in praise of Milton's Paradise Lost—'The oftener we read it, the more beauties we discover."

Phil. You are very right.

Tyr. Thus far then, dear Philomathes, you and I agree; and now I shall be happy if you will give me some account of the rise and progress of Christianity, and the different tenets and principles of the various sects in Britain.

Phil. You require too much to be here performed; however, I will do what I can to satisfy you.

5. *Of Judaism, Paganism, Christianity, and Mahometanism.*

Tyr. What do you understand by Judaism?

Phil. 1. The customs, religion, manners, and profession, of the Jews, according to the ceremonies of the law only. They were first called Hebrews, from Heber, the father of Abraham; and Israelites, from Jacob, whom God called or named Israel; and afterwards they were called Jews, from Judah, Jacob's fourth son. So also the land of Israel, the land of Judah, or Judea, are the same thing.

2. The history of the Jews, their rise and bondage, their great deliverance from it, the law of God given to them, their ceremonies and manner of worship, you will find at large in the Pentateuch, or the five books of Moses, called Genesis, Exodus, Leviticus, Numbers, and Deuteronomy. Here may be seen their perpetual deliverance from strange and powerful nations, and at the same time their perpetual ingratitude, unthankfulness, and murmurings, not only against Moses, but even against God himself; till the Lord was so provoked with them, as to destroy at one time near 15,000 (Numb. chap. xvi.) and at another time, of a plague, 24,000 (chap. xxv.) with many other instances of his judgments;

and notwithstanding this, they kept continually murmuring against the Lord and his servant Moses, provoking him to speak rashly and unadvisedly with his lips; so that at length God told him, neither he nor they should ever possess the promised land of Canaan; and accordingly Moses died on Mount Horeb, and their rebellious bodies died in the wilderness.

3. Moses also evidently foresaw that this criminal and stubborn behaviour would certainly end in their final destruction, without a reformation of manners and conduct; and, therefore, it is worthy our observation to see the love he bare to them, notwithstanding their ingratitude. For before his death he expressed himself to them in so pathetic a manner, and gave them such fine lessons in every part of their duty, to be performed both to God and each other, as perhaps cannot be paralleled for beauty and eloquence. See Deut. chap. iv, v, vi, vii, viii, ix, and xxxii.

4. After the death of Moses, Joshua became their leader, and conducted them over the river Jordan, fighting all their battles: in these he was victorious over all the nations that opposed him, till he brought them into the land of Canaan, according to God's promise.

5. After the death of Joshua, they had no particular leader or guide, but every man did that which seemed right in his own eyes; running after the gods of the heathens, making to themselves Teraphim, or household images, forsaking the covenant of the Lord their God; going to every mountain and valley, and under every green tree, to worship the false gods of the Egyptians, the Ammonites, the Moabites, the Philistines, the Zidonians, &c. and arrived to such a pitch of abominable wickedness, as even to make their children pass through the fire, and to offer their sons and daughters to devils. Judges, chap. xvi. and xvii. Numb. xxi. and xxii. 2 Kings, xvii. Ezek. viii. 1 Kings, xi. Read also the books of the prophets Isaiah, Jeremiah, Ezekiel, &c.

6. The government or state of the Jews has undergone various changes, viz. 1. It was patriarchal, when the fathers of every family were kings and priests in their own houses: and after their decease, the first-born had the same power, to take in, cast out, give or disinherit, bless, curse, and punish with death, &c. 2. After this it was dictatorial, or theocratical, under the power and command of Moses and Joshua, and by the direction of God himself. 3. It afterwards became aristocratical, in the time of the Judges, and also the intervals between the death of one judge and the choosing of another, for then they were ruled and judged by the Sanhedrim, viz. by the authority of the great court of the seventy elders. 4. After this it was monarchical under Saul, their first king, and so continued in Judah till their captivity, which was about 500 years. 5. In the time of their captivity they were under various changes of government, from Zerubbabel to John Hircanus. 6. They again became a monarchical and regal state, under twelve different kings.

7. The Jews acknowledge the written law of Moses, comprehending the ten commandments, &c. but they prefer the oral law of tradition much before it; for they say this is the true explanation of the written law, and that it was given to Moses in the mount at the same time the written law was given: that he communicated it to Joshua; Joshua to the seventy elders; these gave it to the prophets; from thence it came into the great synagogue; and there by the wisest Rabbies it was digested into order; and, when finished, was called the Talmud, or Holy Book, being, they say, the very foundation of the written law of Moses, as that is very scanty and deficient, and the Talmud explains all the doubtful passages, and is so fine a supplement, that nothing is to be compared with the most holy Talmud.

8. The ceremonies and worship of the Jews are so many and so different, that it would be impossible at present to relate them particularly; but concerning their opinions, thus much may be said, That they believe in one God only, the Creator of heaven and earth: That he is self-existent, immortal, absolute, and irresistible: That he alone is to be worshipped, and that without a mediator: That he knows and governs all our actions: That Moses was the greatest prophet of all others: That the law which was given to him is of divine authority, and delivered by divine inspiration: That all its precepts are immutable, and that we are to do what this law commands, and avoid what it forbids: That the Messiah will come at the end of time, and the dead shall be raised, and every man be judged according to his works.

9. The Jews did always, and do still, observe and keep certain feasts or festivals, viz. 1. Their sabbath. 2. The passover, or feast of unleavened bread, kept at our Easter. 3. Their pentecost, kept at our Whitsuntide. 4. The feast of tabernacles, kept for seven days, during which time they used to live in booths, &c. 5. The feast of trumpets. 6. The feast of atonement, or expiation. 7. The feast of the new moons, being the first day of their months. 8. The sabbatical year, or year of rest, being every seventh year, in which they neither tilled the ground, sowed, or reaped; this was in commemoration of the sabbath itself. 9. The feast of dedication. 10. The purim, or feast of casting lots. 11. The year of jubilee, called the sabbath of sabbatical years, or every fiftieth year, at which time or feast all places or estates were returned to those who sold them, and all slaves were set at perfect liberty, &c.

10. The orders of men among them were, 1. The high-priest, of which Aaron was the first, and his first-born after him in lineal descent. This first high-priest, Aaron, was undoubtedly a lively image or type of our High-priest, the Son of the living God, Heb. chap. iii. and v. 2. The common priesthood, which belonged particularly to the sons of Levi. 3. The Nethinims, (which were no Jews, but Gibeonites, Josh. ix.) who were hew-

ers of wood, and drawers or procurers of water, and were singers in the service of the temple. 4. Elders or ministers of the synagogue, some of which were called, 5. Sheliac Zibbor, or the messenger or angel of the church. 6. The Chesanims, or overseers, who had the charge of the synagogue, and kept the book of the law, and the liturgies, and all the utensils. 7. The Chazan, who stood by to overlook and direct those who read the law and the prophets. 8. The interpreter, whose province was to render the lessons which were read to the people in Hebrew into the Chaldee language, the common people having quite forgot the Hebrew tongue in the time of their captivity. 9. The text itself, or portion read or taken out of the law of Moses, the Jews call Torah; and the explanation or paraphrase upon it, they call the Targum.

6. *Of the Sects of the Jews.*

1. The Pharisees were the most noted sect among the Jews, and in respect of which the others were called Dissenters: They received the written canon of the scripture, and held all manner of traditions and superstitions of their own invention: They were remarked for their pride in choosing the chief seats at all public assemblies, for their going about making long prayers, to be seen of men, and to be esteemed in the eye of the public more religious than their neighbours, always watching other people's actions, and finding fault with every trifle.

2. Scribes: these were of two sorts; the one taught, transscribed, and interpreted, the law and the prophets in the schools; the other belonged to or professed the civil law, and were called Lawyers.

3. The Sadducees were a sect among the Jews, that with the Pharisees believed the written law, and the doctrines of the resurrection, angels, and spirits; but, at last, rejected all except the Pentateuch, and denied the resurrection of the dead, and the being of angels and spirits.

4. The Samaritans were a sect of mongrel Jews or heathens; some, however, conformed to the Mosaic law, but rejected all other traditions, and said that God ought to be worshipped on mount Gerizim, and not at Jerusalem. You read in John, (chap. iv.) that the Jews hated them so much, that they had no dealings or connections with them.

5. There was another sect, but not of much note, called Karrites: these were such Jews as abided wholly by the written law of Moses, rejecting the oral law, and many other traditions and superstitions of the Jews. There are many of this sort among the Jews to this day.

6. Herodians, or the admirers and followers of Herod the Great, whom they honoured with ridiculous solemnities and orations, be-

lieving him to be the Messiah, and sometimes extolling him so as to call him God. See Matt. chap. xiv. and xvi. Mark, chap. iii. and xiii. Luke, chap. xiii. and Acts, chap. xii.

7. Publicans; these were only officers who collected tribute, or gathered in the taxes imposed by the Roman emperors upon the Jews, who never could easily submit to such taxations, therefore hated both the imposer and collectors of such taxes.

8. Another sect of officers were called Masorites: they examined all the Bible throughout very strictly, and then put the meaning of the text or difficult words in the margin, (which they call the Kert,) right against the difficult or wrong word, which they call Celib.

Thus much, Tyro, for a general hint of the Jewish religion, rites, &c. but for the general and particular history of their wars, transactions, and vicissitudes of their state, from time to time, I refer you to Josephus's history of the Jews.

Tyr. I am highly obliged to you for the information you have given me, Philomathes.

7. *Of Paganism.*

Tyr. What is implied by Paganism?

Phil. The religion of the heathens, or their adoration and worship of idols and false gods.

Tyr. Who and what were the gods they worshipped?

Phil. Not only gods in the supposed form of men, such as Jupiter, Mars, Bacchus, Apollo, Venus, Diana, &c. but even birds, beasts, fishes, creeping things, as also trees, plants, and vegetables.

8. *Of Mahometanism.*

Tyr. What is Mahometanism?

Phil. The religion of those who profess and practise the tenets of Mahomet.

Tyr. Wherein does it particularly consist?

Phil. 1. That there is but one God, who ought to be worshipped. 2. That the same God raised up various prophets in the world, and that we ought to esteem them as his messengers, and obey them. 3. That Mahomet himself was one of the heads of these prophets. 4. They believe in angels and spirits, the resurrection and day of judgment. 5. They hold with the duties of prayer, fasting, almsgiving, &c.

Tyr. Who and what was Mahomet?

Phil. 1. Mahomet was son of Abdallah, of the tribe of the Karaishes, his mother's name Amena. He was born at Mecca, a city of Arabia, A. D. 571, whose father dying while he was young, left him to the care of his uncle, Abu Tuleb, a considerable mer-

chant trading to Syria, with whom he lived till he was about 25 years of age. At this time one of his uncle's acquaintance, a great merchant in Mecca, died, and left his effects to Cadigha, his wife, who invited Mahomet to transact her business, which he did, and in three years after married her, he being then about 28 years of age. 2. Mahomet, trading largely to Egypt, Palestine, and Syria, knew well the opinions both of the Jews and Christians, and their different sentiments of religion; and, therefore, being well known, and ambitious of fame, he began to frame, compose, and broach, a new system of religion, suitable to both parties; to which end he not only grew very abstemious in all manner of superfluous eating and drinking as usual before men, but every morning withdrew into some solitary place or cave, and there (as is reported) spent his time in abstinence, fasting, and prayer; but others say, he resorted to these private places with divers priests and monks, and consulted with them concerning this new scheme of imposture. 3. His next business was to make converts to his new system of imposture: he, therefore, began with his wife Cadigha, telling her how the Lord had appeared to him in different places and times, both by dreams, visions, and voice, and had called him to be a prophet among the people; but she was not easily persuaded into such stories, and told him, she believed they were only fancies and delusions of his own. Mahomet, who was willing to convert his wife rather by persuasion than force, by means of a fugitive monk, priest, or friar, who supported his imposture, at last brought over Cadigha to believe every thing that was said concerning the mission of her husband, whom she at last confessed and believed to be a prophet indeed. His whole household, with his servants and slaves, to whom he promised freedom on embracing his doctrines, soon followed the example of their mistress. 4. Mahomet having accomplished his purpose thus far, now acted more openly, and converting some principals of the city of Mecca, he publicly declared himself a prophet, sent from God to convert them from Paganism to his true religion: in doing which he never neglected to assert the constant attendance and presence of the angel Gabriel; that God had raised him up to correct the errors of all other prophets; and had revealed his will and design to him of every thing he intended should be done hereafter for the advantage of his church on earth. To confirm the truth of all he said, and jealous of not being believed by the people in general, he proceeded yet further, and said, that God himself, by the angel Gabriel, gave him an invitation to his holy habitation; that accordingly he went thither; of which he gives a most extravagant account, but too long for our purpose. 5. Mahomet also acted strongly upon the passions of his followers, by his manner of describing heaven and hell as places of future rewards of virtue and vice: For as he lived in the torrid zone, (where there is no want of heat,) he according told those cou-

verts that embraced his doctrine, that they should certainly go to heaven, and there enjoy pleasures equal to their most exalted wishes, viz. women, ever young, beautiful, and obliging; shady walks, ever green, cool, and pleasant; delightful rivers and streams; delicious fruits of all sorts, and an eternal uninterrupted enjoyment of all manner of dainties and delicacies. But all such as held him or his doctrine in contempt, he pronounced their infallible condemnation to hell, which he painted to their senses in very terrible shapes? telling them it was a place where there was nothing but a hot and scorching air, and black smoke; their continual food would be briars, thorns, cinders, ashes, and burning pitch; and their drink boiling-hot water, melted lead, &c. 6. Mahomet, however, was opposed by many; and being required to work miracles, or shew some signs of his mission, that they might believe; he told them that God was angry with them for their disbelief, and therefore would not shew any more signs and wonders among them. He was also resolved to be revenged of his opposers; for he got an army together, and went to Medina, and slew all that did not own him as God's great prophet; telling them, at the same time, that as God had sent Moses, Jesus, and other prophets, who did miracles, and they would not believe, he had now sent him to chastise them with the sword for their infidelity. 7. Mahomet, nevertheless, knew that the working of miracles would certainly gain him more respect; and therefore, as he knew he had no power to work any, he artfully procured a set of men to attest they saw him do many, viz. that pure water streamed from between his fingers; that the trees went forth to meet him and follow him; that he once clave the moon in sunder, and put it together again; that a shoulder of mutton once spoke to him; with many ridiculous stories; by which Mahomet lost the favour of those who had any sense to think at all, and became an impostor in the eyes of the most sensible part, both of Jews, Pagans, and Christians.

Tyr. How could he expect any other? Could he imagine such nonsense as this should be received without thought and consideration? However, if you have any further account to relate of his proceedings, pray repeat them, for they are diverting.

Phil. The most remarkable are, of his being invited to heaven; his converse with God there; and some other ridiculous and blasphemous things, which I think unworthy of your notice.

Tyr. Pray how did Mahomet manage affairs after his return from his pretended journey to heaven.

Phil. You may naturally conclude, that some believed what he asserted, and others neither would nor could; therefore it caused contentions and insurrections; and the principal men of Mecca were resolved to examine him more closely upon it, and punish him accordingly. Having timely notice of such intention, he fled secretly with his party to Medina, a large city of Arabia,

where he propagated his new system, built a place for the exercise of his new-fangled religion, and issued out orders that all computations of time should begin from the day of his flight, called Hegira: from hence commences the Mahometan era, which was on July 16th, in the year of Christ 622.

Tyr. I am obliged to you, Philomathes; but how did he proceed in Medina?

Phil. The same as in Mecca, always creating fresh disturbances, by propagating lies and impostures; but the people in general not believing his blasphemous tales, nor embracing his ridiculous tenets, he (like the church of Rome) took up the sword of chastisement, strictly forbidding all his soldiers or disciples to dispute or parley with the Christians, or any other sect, concerning the authority of his mission or religion, but to cut off all that dared to oppose it, and that would not immediately promise to embrace it. Thus he went on till the seventh year of his Hegira, or flight from Mecca, and then proceeded to Chiabar in Arabia, and was entertained by one Horesh, whose daughter's name was Zameth; and she being no friend to Mahomet, was resolved to try whether he was indeed a prophet or not; and therefore poisoned a shoulder of mutton, which he and his friends were to partake of one night at her father's: and though she was desired to desist from so rash an undertaking, she said she could not; for that her conscience was very easy in the design, as her heart had continually told her, that she would certainly do God and mankind great service, in cutting off such a tyrant and impostor. She accordingly did it, and they had not eaten long before Basher, one of his greatest friends, was taken ill and died; upon which Mahomet, suspecting what was done to it, spit out what he then had in his mouth: however, he had eaten enough to answer Zameth's design; from that time he lingered, pined, and wasted away, and died on his birth-day, in the city of Medina, (being, according to their account, just 63, and by ours 61 years of age,) where he was buried, and not suspended in the air by means of large loadstones, as has been falsely reported.

Tyr. And what did his followers do after his death?

Phil. Mahomet left behind him a book which he compiled, called the Alcoran, or rather Koran, containing rules for their faith and practice. This book is held in such reverence, that whoever touches it with unwashed hands is put to death. It contains nothing but a religious jargon of inconsistencies; such as the chapter of the elephant, another of the cow, the fly, &c. &c. The reason (it is said) that the Mahometans hold this book in such veneration, is because Mahomet told them it was written with the finger of God, upon exceeding fine parchment, made of the skin of the very ram which Abraham offered up for a burnt-offering instead of Isaac his son, and God sent it from heaven to him in a roll, sealed up, by the hand of the angel Gabriel.

Thus much, Tyro, concerning Mahometanism, which to this day is professed in Turkey, and several other places in the East.

Tyr. I am very much obliged to you, Philomathes, for this information; and pray now give me leave to remind you of your former promise of giving me a more particular account of Christianity, and the different opinions of those who profess it.

Phil. I Will.

9. *Of Christianity, with a concise Account of the different Opinions, Ceremonies, and Manner of Worship, of the various Professors of it.*

1. *Of Christianity.*

Tyr. What do you mean by the word Christianity?

Phil. 1. Christianity, in the general sense, or common acceptation of the word, signifies a true belief in Christ and his doctrine, in opposition to idolatry and paganism. But, 2. It more strictly implies, not only a bare belief in Christ, but a constant perseverance in all good works; and an abhorrence of, and abstaining from, every thing that is evil, according to the doctrine and examples which both he and his apostles taught and practised, and which are so evidently set forth to us in the holy scriptures. He who does this is a Christian indeed, without paying any regard to the doctrines and ceremonies of any particular national church, sect, or people; the manner of worship being only the mode of religion, but not religion itself; for all Christians, of all persuasions whatever, acknowledge that there is but one way of worshipping God—that is, in spirit and in truth. See St. John, chap. iv. ver. 24.

Tyr. It is very true, Philomathes: and as every national church has its different way of worship, and every sect among us different notions of theology, how can I, that am but young, or how can those that are quite ignorant, know when they are right or wrong?

Phil. Very easy; by a constant reading and perusal of the sacred books of the Old and New Testaments.

Tyr. But you know, sir, that they are not so easy to be understood by the people in general.

Phil. I grant they are not; but this is no proof that they might not be better understood than they are, if they were read more constantly, and with due attention. But, alas! Tyro, we never want a plea for any occasion. 1. Ask yourself and your acquaintance, who plead this ignorance of the sacred writings, whether you or they have read them so often as you ought to do? or how it is possible to become acquainted with the knowledge of any art or science, without either conversing with persons that understand it, or attentively reading such authors as treat upon it? 2. The greatest reason then, that the scriptures are understood no better, is because

they are neglected so much, because you often meet with men that are tolerable good scholars, and profess themselves members of the church, who are totally ignorant, not only of the sense and meaning of a plain text of scripture, but are almost totally ignorant that there is any such text, or sentence at all. 3. If you tell them you are surprised they don't remember such and such remarkable passages; they immediately answer, that they have no memory to retain things like other persons. Behold what a seemingly modest answer here is, to cover or excuse a wilful neglect, since the very persons who own their deficiency in this respect, would consider it a great affront and insult, if any one should dare to call in question their knowledge, memory, or capacity, in comprehending and retaining matters in general. 4. It is evident then, that it is not so much the want of capacity or opportunity, as the want of resolution and delight. All who are resolved to read the scriptures with these advantages, I dare venture to aver, will soon understand all those necessary parts proper and sufficient for the instruction, duty, and practice of a Christian, in every state of life; and not these only, but would very soon *be ready (or capable) to give an answer to every man that asketh them of the reason of their faith,* 1 Peter, chap. iii. ver. 15. 5. In short, was there an embargo laid upon the word of God in Great Britain, as there is in the church of Rome, we might then have just plea; but our situation, you know, is quite different from theirs: for there is no doubt that many of them would be very glad to read it oftener, but dare not; whilst all sects among us may not only read it, when and wheresoever they please, but are even pressed upon and invited to read it oftener, yet will not. Behold, what a strange abuse of liberty is here! what a grievous neglect of duty is this!—to let slip all opportunities of reading and perusing such things as would enable us, not only to stand proof against all the adversaries and opposers of revealed religion, but would furnish our minds with such knowledge as would give us unknown satisfaction, and turn out much more to our advantage than we at present conceive.

2. *Of the different Tenets of the principal Sects, or Professors of Christianity.*

Tyr. I should be obliged to you, Philomathes, to give me a short account of the tenets of the various professors of the Christian religion.

Phil. To do this perfectly is almost impossible: therefore you must be content if I tell you no more than the tenets, articles of faith, and manner of worship, of the professors of the three principal churches in Europe, viz. the church of Rome, the church of England, and the Dissenters.

1. *Of the Church of Rome.*

Tyr. What do you mean by Roman Catholics, or Papists?

Phil. The followers or professors of the doctrine of the Romish church, or papacy.

Tyr. What are the principal tenets of the church of Rome?

Phil. They say or believe, 1. That Jesus Christ is one of the persons of the most holy Trinity; that he came from heaven, took our nature upon him, and suffered death upon the cross. 2. That before he ascended to heaven, he invested the apostle Peter with the power of infallibility, and gave him the keys of heaven and hell, with a full power of remitting or retaining the sins of men. 3. That in the year of Christ 42, the apostle Peter went to Rome, and governed the church there as supreme bishop above 24 years, and was at last crucified with his head downwards. 4. The Roman Catholics believe, that the same power and authority which was vested in the apostle Peter, descended to every succeeding bishop or pope of Rome, by an uninterrupted succession; who, they say, is God's vicegerent, and supreme head of all nations, and of every nominal church on earth; and has a power to create or set up kings, and to depose them, and to ordain bishops and priests, and excommunicate them at pleasure. 5. They believe that the pope has a power to grant indulgences. 6. They believe in a purgatory, or place of fire, to purify the souls of the departed; and that the priest, by offering up or saying mass, can deliver their souls from this state of prison and misery, and transfer them into joy and bliss. 7. They believe that Jesus Christ, after he was crucified, descended personally into hell, and released from thence all the souls of the former saints. 8. They assert that the blessed Virgin Mary is the mother of God, and that she atones for the souls of them that adore and worship her on earth; therefore her picture, with the pictures of other saints, ought to be held in great respect and veneration. 9. They profess to do works of supererogation. 10. Some of their mendicant priests go in a mean dress, to make the laity believe what poverty they suffer for the name of Jesus, though at the same time they are very rich; and by this they excite pity and compassion, and get a great deal of money. 11. They believe there are seven sacraments, viz. Baptism, Confirmation, the Eucharist, Penance, Extreme Unction, Orders, and Marriage. 12. They forbid the eating of flesh in the time of Lent, and on certain fast days; but notwithstanding their strict orders of abstinence and fasting, some will eat fish and other things. 13. They believe in the doctrine of transubstantiation; that is, after the priest has blessed or consecrated the bread and wine in the sacrament, the symbols or elements are no more bread and wine, but really the very body and blood of our Lord Jesus Christ: and are very jealous and zealous in the cause of their religion, making it an heinous sin in all such as will not adhere most strictly to their dictates. 14. They are exceedingly assiduous to gain converts, by a particular method and a long unwearied patience and diligence, in every country but their own,

to bring over souls by fair promises: but it is not so where they have power, for there they insist upon a belief and compliance with every thing; otherwise their love is turned into cruelty, their zeal into inhumanity, and their persuasions into punishments. Lastly, these, and many other ridiculous impositions, were continually imposed upon the consciences and persons of men in all nations, which occasioned a large body of people to dissent, separate from, and protest against, popery, or the Romish church, who are therefore called Protestants, be they of what sect or denomination they may; and the church of Rome, without distinction, calls all such Protestants heretics, and they all partake of her anathemas.

Tyr. One would hardly believe that a church which pretends to have its sanction from God, and its examples from his holy apostles, can possibly be so inconsistent in its principles and practice.

Phil. But the history of all nations will fully demonstrate and attest it: England has severely felt her rod, and the Protestants of many neighbouring nations are not strangers to her follies and cruel inquisitions.

Tyr. I have read the very chapter, but a few days ago, to which you refered me, and was shocked at the perusal: and indeed I should think it very impolitic, as well as wicked.

Phil. In Italy, and countries more particularly under the pope's jurisdiction, it may perhaps be political; but plain it is, that through this tyrannical and persecuting spirit the church of Rome has lost ground, and has been sinking in its power ever since the glorious Reformation under Martin Luther, in the reign of Henry the Eighth, in the year 1517. Read Henry and Whiston, as also the Margin of queen Elizabeth's bibles, on the xiii, xiv, xvi, xvii, xviii, and xixth chapters of the Revelation.

Tyr. Pray tell me what followed after the Reformation?

Phil. The Established church, commonly called the church of England.

2. *Of the Church of England.*

Tyr. What do you imply by the church of England?

Phil. The religion and worship of the people of England, as by law established: it is governed by two archbishops, besides bishops and inferior clergy, of whom the king is supreme.

Tyr. What are the principal tenets of the church of England?

Phil. You may see the principles of this church very particularly set forth by and in thirty-nine articles, printed and published in their book of common prayer, or form and ceremonies of worship.

Tyr. But I wish you would give some short account of the principal tenets of the church of England; as to know this may

be of service to such of its members who do not understand them; and also remove the prejudice of many others who now accuse it unjustly.

Phil. Your arguments are just. Therefore I shall give you an account of it, according to its own articles, and not according to the opinion of modern writers.

Tyr. Why so, sir?

Phil. Because the clergy themselves are divided into two sorts; some being Calvinists, others Arminians.

Tyr. Sir, I am satisfied; proceed now, if you please, to acquaint me with the church of England, according to its articles or first establishment.

Phil. I will. 1. The church of England has thirty-nine articles, of which some contain the matter of faith relating to the church of God, and others are civil articles relating to its government, order, and discipline. 2. The 1st, 2d, 3d, 4th, and 5th articles, set forth, that there is but one living and true God; that in the Godhead there are three persons, Father, Son, and Holy Ghost, all equal in power, majesty, and glory; that the second person in this Trinity took our nature upon him, and is both God and Man united in one Christ; that he was crucified for us in the flesh, was buried, rose the third day from the dead, according to the scriptures; that he ascended into heaven, and there makes continual intercession for us. 3. They own (in article 9.) original sin, and that by Adam's first disobedience, or transgression, all mankind are tainted or infected with evil, have a natural inclination to sin, and therefore are obnoxious to the wrath of God; and (in article 10.) that man's condition since the fall is such, that he has no power, or free will, of himself, to do good works, acceptable to God, without the grace of God working with him. 4. The eleventh article affirms, that we are justified by faith only, and are accounted righteous before God, for or through the merits of Christ only; but the 12th recommends the practice of good works, as the only proofs of a true faith. 5. This church teaches us, in article 13th, that works done before justification, or before grace is given, cannot be pleasing to God, nor do such works make us meet to receive grace, as they spring not from a true and lively faith; and the 14th flatly denies the works of supererogation, and acknowledges that when we have done all we can possibly do, we are still unprofitable servants. 6. The 17th article treats of the doctrine of election and predestination. 7. The 18th article says, that the church holds all persons accursed who shall presume to say that any man is saved by the law, or by any sect, profession, or persuasion: and the 22d denies the Romish doctrine of purgatory, paying adoration to angels, and relics of saints. 8. The 27th and 28th articles acknowledge two sacraments only, viz. Baptism and the Lord's Supper, and say, that after consecration the bread and wine are unchanged, and both are to be received by the faithful

ful only, in commemoration of the body and blood of Christ, broken and spilt upon the cross. 9. The church holds infant baptism, requires godfathers and godmothers, and marks the child in the forehead with the sign of the cross by the finger, at the font. 10. These are the articles relating principally, though not wholly, to the tenets of the church of England: the other articles contain only rules and orders concerning its government and discipline.

Of the Manner of Worship.

1. The church of England worships God, first by confession of sins, then calling upon his name in prayer, praises, and singing of psalms. The collects are short prayers used by the minister and people, and are allowed to be well suited to almost all occasions; and the whole way and manner of worship is regularly and explicity laid down in the book of Common Prayer.

2. As the Romish church calls all people heretics who separate from her communion, so the church of England calls all those who separate from her communion schismatics.

3. As the Protestants separated from the doctrines of the church of Rome, on account of its errors and superstitions, so a certain set of men (formerly called Puritans) separated from this church, under the notion that several of its forms and ceremonies were unwarrantable, and that their conscience could not bear them.

4. All other sects who profess Protestantism in England, but dissent from the established church, are called Dissenters.

5. The Dissenters are divided into many sects, viz. Presbyterians, Independents, Baptists, or Anabaptists, Methodists, Quakers, Arians, Arminians, Antinomians, Socinians, (or, as they are at present called, Unitarians,) &c.; but the most general or popular of these are the Presbyterians, Independents, Methodists, and Quakers, though the Unitarians have lately made some progress.

1. *Presbyterians.*

Tyr. What do you mean by Presbyterians?

Phil. All those persons who deny episcopacy, or the government of the visible church by bishops; or those who assert that the church should be governed by elders or presbyters.

Tyr. In what manner do they choose their ministers?

Phil. By making choice out of several persons, whom the elders first examine in principles and abilities; and when they have fixed upon a pastor, teacher, or minister, they nominate, elect, or ordain him, by fasting, prayer, and imposition of hands. See Acts chap. i. verse 23 to the end.

Tyr. How do they govern their church?

Phil. All common affairs in every particular church or assembly

are regulated by their ministers and elders. 2. If questions arise which require more judgment to determine, they then appeal to the ministers and elders of other congregations. 3. They have yet an higher appeal than this: and in case of differences and disputes, they call a court or synod of the most able among them, who meet to regulate all affairs, and to adjust every dispute to the satisfaction of inferior congregations.

Tyr. Very well, sir; and pray what are the chief tenets and manner of worship of the Presbyterians?

Phil. Their tenets concerning God, the Trinity, the sufferings of Christ, &c. &c. are equally the same as that of the articles of the church of England; and they baptize infants by sprinkling, and have sponsors for them, as the church has, but refuse the names of godfather and godmother.

Tyr. What is their manner of worship?

Phil. Some have, and others have not, any regular form of prayer, but worship by *extempore* prayer, preaching, and singing psalms; some of them frequently conclude their prayers with the Lord's prayer. These sects are rather Arminians than Calvinists.

2. *Independents.*

Tyr. What is meant by Independents?

Phil. The word itself carries its own meaning with it. They are a sect who profess themselves independent of all other churches or persuasions, of all councils, synods, and jurisdictions, and argue that every church or assembly of men have a power lodged in themselves; and therefore deny all superiority and subordination. Their worship is the same as the Presbyterians, and their tenets much the same, except it be that they hold a particular redemption, and are in general rather Calvinists than Arminians.

3. *Anabaptists or Baptists.*

Tyr. What do you mean by Anabaptists?

Phil. They are those who oppose the baptism of infants; say it is unwarrantable, and that none are proper objects of this first sacrament but adult persons, and such as are capable of giving account of their faith in Christ Jesus, and believe that it is an ordinance that he enjoined all his disciples to follow. They say further, that sprinkling with water is not baptism, but an innovation, contrary to the rules of scripture; and that therefore no person is truly baptized, who is not dipped into or buried under water, in the name of the Father, Son, and Holy Ghost.

Tyr. To dip, or plunge into water, appears at first view to be the method pointed out in scripture. But pray, from whence sprang this sect, and what are their tenets and manner of worship?

Phil. After observing, that it is not so certain and absolute that dipping was always used at first, and that reason and primitive history point out many impracticable cases, where dipping could

not to be the mode of baptism; I shall only say, that they appeared first in England in 1521, and were the followers of Nicolas Storak, Mark Stubner, and others, who were disciples of Martin Luther, in the time of Henry VIII. 2. Their manner of worship is also by *extempore* prayer, praises, preaching, and singing psalms. 3. Their government or discipline is also by elders. They are distinguished into general and particular baptists; of which the former are Arminians, and the latter Calvinists.

4. *Methodists.*

Tyr. What are the Methodists?

Phil. This term was formerly applied, in France, and other countries, to certain polemic doctors, for their peculiar method of defending Popery against the Protestants; but what we now understand by it, is the sect founded about the year 1729 by Messrs. John and Charles Wesley, with whom, in 1735, was associated the celebrated Mr. Whitfield. However, in 1741, a separation took place; Mr. Wesley not holding the decrees, which Mr. Whitfield and his friends strenuously supported. The principles of the Methodists approach nearer to Arminianism than those of any other sect.

5. *Quakers.*

Tyr. Why are this sect called Quakers?

Phil. Because at first, when they spoke or preached, they had violent shakings or agitations.

Tyr. Who was their first teacher, and what are their principal tenets?

Phil. Their first leader was one George Fox, in the year 1650, who taught that the light within is more sufficient to guide men to heaven than the holy scriptures; but they are now greatly reformed, and pay a great regard to God's word, but still deny the two sacraments, and all manner of ceremonies. 2. They refuse to take an oath before a magistrate, and therefore are indulged to give their affirmation when called upon as witnesses. 3. Their worship is very abrupt, any person rising up to pray or preach according as he is moved. 4. They pray and then preach, or instruct their congregations in all moral duties, and speak continually against the modes, vanities, and vices, of the age. 5. They are very plain and simple in their dress; and as for order and discipline in governing their different assemblies and congregations, and for unity, harmony, and brotherly love, they set a good example to other Christians.

Of the lesser or more private Sects.

1. *Arians,* or the followers of Arius, who in the time of Constantine the Great, A. D. 315, taught that the Son of God is not equal or consubstantial with the Father, but only the first of all

created beings. His opinion was condemned as heretical by the council of Nice, in A. D. 325; but notwithstanding this, the Arians infected the eastern churches with their principles; and though they are not a church or sect of themselves, yet are they very numerous to this day in several churches, but particularly in that church whose articles teach them quite the contrary.

2. *Arminians*, those who adhere to the doctrine of Arminius, who separated himself from the Calvinists in the sixteenth century, and taught that predestination is grounded on foreseen works of righteousness; that a man has power of himself to embrace or reject the motions of the Holy Spirit; and that he may finally fall from grace after justification.

N. B. Though there is no particular sect or church in England under the appellation of Arminians, yet they are very numerous in all the reformed churches.

3. *Antinomians*, a sect who reject not only the Mosaic law of ceremonies, but assert also that all manner of good works, such as honesty, charity, sobriety, temperance, chastity, &c. are of no signification, because good or evil works neither forward nor hinder a man in his salvation; that our righteousness is already fully complete in the offering of Christ; and that whoever believes faithfully that the work of redemption is already finished, it is sufficient, whatever may be his life and conversation. There were several leaders of this sect in London; and the two most noted teachers among them were Cudworth, of Oxford-market, and the famous J. Relly, of Coach-maker's-hall, London. Dr. Crisp, who published two volumes of Sermons, has been ranked with this class.

4. *Socinians*, are those who follow the doctrine of one Faustus Socinus, who taught that Jesus Christ was only mere man, and had no existence before the Virgin Mary.

5. *Calvinists*, or *Supralapsarians*, the followers of the noted reformer Calvin, who taught that predestination is absolute and unconditional from all eternity, and that God elected certain persons before the foundation of the world to eternal salvation and holiness of life.

6. *Lutherans*, the followers of Martin Luther, the noted reformer in the reign of Henry VIII. He wrote against pope Leo X. concerning the abuse of indulgences: his chief tenets were a firm belief in the Trinity, and that we are justified by faith only in Jesus Christ.

7. *Unitarians*, only a modern name for Socinians.

8. *Muggletonians*, the followers of Lodowick Muggleton, a journeyman taylor, who, with one Reeves, in the year 1647, taught the people that God himself left his glory in heaven, under the government of Moses and Elias, and came down and suffered death on the cross. They denied the Trinity, the immortality of the soul; and said they had a power of saving and

damning. They frequently assembled together in fields, and in the evening both sexes met at alehouses or places appointed, and, by the actions that followed, it is evident they did not believe the soul is immortal. This sect has become obsolete.

Tyr. I am obliged to you, sir, for your information; and pray are there any more sects or professions worthy our present notice?

Phil. Not that I know of at present; for all the others are blended, compounded, or intermixed, with those already spoken of, in some respect or other.

OBSERVABLE DAYS

OF THE CHURCH OF ENGLAND.

Advent, is a time appointed by the Church as a preparation for the approaching feast of the nativity of our blessed Saviour.

Christmas, is a festival celebrated on the 25th of December, in commemoration of the birth of Christ.

The Circumcision of Christ, is a feast celebrated on the first of January, in commemoration of Christ's incorporation into the Jewish church, by the bloody rite of circumcision.

Epiphany, is a feast celebrated the twelfth day after Christmas, or our Saviour's nativity, wherein he was manifested to the Gentiles, by the appearance of a miraculous blazing star, conducting the wise men to the place of his abode.

Septuagesima, is the third Sunday before Lent; so called because it was about seventy days before Easter.

Sexagesima, is the second Sunday before Lent; so called, as being about the sixtieth day before Easter.

Quinquagesima, is the next Sunday before Lent; so called from its being about the fiftieth day before Easter.

Ash Wednesday, is the first day of Lent; so called from a custom of the ancient church of fasting in sackcloth, with ashes upon their heads, in token of humiliation.

Lent, is a time of fasting and abstinence for forty days before Easter, in memory of our Saviour's miraculous fasting for forty days and forty nights, in the wilderness.

The four Ember Weeks, are fasts, like those of the Jews at the four seasons, Zech. viii. 19. These seasons are appointed for the ordination of priests and deacons, Acts, xiii. 3. The first begins upon Wednesday next after Ash-Wednesday; the second upon Wednesday next after Whit-Sunday; the third upon Wednesday next after September 14. The last Ember Week begins upon Wednesday next after December 13. The days of the week are Wednesday, on which Christ was betrayed by Judas; Friday, on which he was crucified; and Saturday, on which he lay in the grave.

Good Friday, is the day in commemoration of our Saviour's suffering on the cross, when he was crucified between two thieves, for us men, and for our salvation.

Easter, is a solemn festival appointed in commemoration of Christ's resurrection from the dead, the third day after his crucifixion.

Ascension Day, is a festival of the Church in commemoration of the miraculous elevation of our Saviour, when he ascended up to heaven in the sight of his apostles, forty days after his resurrection.

Whit-Sunday, is a solemn festival, instituted to commemorate the descent of the Holy Ghost upon the apostles, in the shape of fiery tongues. It was called Whit-Sunday, from the admission of the catechumens, clothed in white robes, to the sacrament of baptism, on the eve of this festival. It answers to the Pentecost of the Jews.

Trinity Sunday, is the first sabbath after Whit-Sunday, sacred to the ever blessed Trinity—Father, Son, and Holy Ghost.

The religious intention of the Church, in the holy observation of the apostles' and of other saint days, is, that they might stand as sacred memorials of God's mercy, as forcible witnesses of his ancient truth, as confirmations of the faith which we now profess to be the same as their's then was, as excitements to the piety which they practised, and as everlasting records, to shew whose blessed servants they were on earth, and now are like the angels of God in heaven.

Alphabetical List of Eminent and Remarkable Persons.

Aaron, Jews' high-priest, born 1570, died 1453 before Christ.
Abbadie, the Rev. James, born 1658, died 1727.
Abbot, archbishop of Canterbury, killed his park-keeper, January 20, 1621; died August 3, 1633, aged 71.
Abel, born in the year 3 of the world; killed by Cain 129 ditto.
Abel, John, the musician, died 1600.
Abelard, Peter, died 1142, aged 62.
Abernethy, John, the divine, born 1680, died 1740.
Abraham died 1821 before Christ, aged 175.
Achilles died 1184 before Christ.
Achmet III. emperor of the Turks, who encouraged printing in Constantinople, died 1730.
Adam died 3074 before Christ.
Adam, Robert, architect, died March 3, 1792.
Adams, George, the mathematician, died August 7, 1795.
Addison, Joseph, born 1672; died June 17, 1719.
Adolphus of Nassau, emperor, deposed, 1293.

Adrian, the emperor, visited Britain, and built a strong rampart; died 138, aged 72.
Adrian IV. pope, an Englishman, died 1159.
Agamemnon died about 1194 before Christ.
Agilnorth, archbishop of Canterbury, who refused to crown Harold, died 1038.
Aglionby, John, one of the translators of our Bible, died 1609.
Agnes, St. died 308, aged 31.
Agricola, the Roman general, died 93, aged 56.
Agrippa, king of Judea, died 94, aged 54.
Ajax, the son of Telamon, flourished 1149 before Christ.
Ajax, the son of Teucer, flourished 1154 before Christ.
Akenside, Dr. Mark, born 1721, died June 23, 1770.
Alban, St. the first English martyr, died 303.
Alewyn, an Englishman, founded the university of Paris, 800.
Alexander the Great, born 356; succeeded Philip 336; founded the Grecian empire 331; died at Babylon, March 21, 323 before Christ, aged 32.
Alexander III. pope, compelled the kings of England and France to hold his stirrups; died 1181.
Alfred the Great, died October 28, 900.
Alfred, son of Ethelred II. had his eyes put out by earl Godwin, and 600 of his train murdered at Guildford, 1036; died at Ely.
Allen, Ralph, of Prior-park, near Bath, died 1764.
Alleyn, Edward, the player, born 1556; died 1626.
Ally Cawn, made a nabob by Colonel Clive, June 24, 1765.
Alphonsus X. of Castile, died 1284, aged 67.
Ambrose, St. bishop of Milan, 374; died 397.
Ambrosius Aurelius, chosen king of the Britons, and crowned at Stonehenge 465; died 508.
Americus Vespucius, discoverer of America, died 1526.
Ananias and his wife Sapphira struck dead, 33.
Anderson, sir Edmund, a law author, died 1605.
Anderson, James, commercial writer, died 1704.
André, major, hanged by the Americans for a spy, Oct. 2, 1780.
Andrew, St. martyred, November 30, 69.
Andrews, bishop of Winton, born 1555, died 1626.
Andrews, Henry, the famous almanack maker, died at Royston, Herts, Jan. 26, 1820, aged 76.
Anhalt, Rev. George, prince of, born 1507, died 1557.
Anello, Thomas, a fisherman of Naples, who rose to great power, and was assassinated, born 1623.
Annibal, Carthaginian general, died 260 years before Christ.
Anselm, died 1109, aged 76.
Anson, admiral, died 1762, aged 62.
Anthony, Mark, Roman orator, flourished 100 years before Christ.
Anthony the Great, St. died February 15, 356, aged 105.

Anthony, St. of Padua, died 1231.
Antonius Pius, emperor of the Romans, died 161.
Antonius, M. the orator, died 87 before Christ, aged 56.
Aquinus, St. Thomas, died 1274, aged 50.
Aram, Eugene, executed for a murder committed 14 years before, 1759, aged 54.
Arbuthnot, Dr. born 1681, died 1735.
Archelaus, of Macedon; patron of learning, 440 before Christ.
Archimedes, the mathematician, inventor of the sphere, killed at Syracuse, 208 before Christ.
Archytas, the inventor of the vice and pulley, shipwrecked 408 before Christ.
Argyle, marquis of, beheaded May 27, 1661.
Argyle, earl of, executed at Edinburgh, 1685.
Aristides, the Grecian orator, lived 488 before Christ.
Aristomenes, the Messinian general, slain 668 before Christ.
Aristotle, died at Calcide, 322 before Christ, aged 63.
Arkwright,,sir Richard, inventor of the spinning jennies, died August 3, 1792.
Arminius, James, founder of a sect, died 1609.
Armstrong, Dr. born 1732, died 1779.
Arne, Dr. Thomas Augustine, died 1778.
Arne, Michael, the musician, died 1785.
Arnold, Richard, English divine, died 1756.
Arrowsmith, John, mathematician, flourished in the 17th century.
Artaxerxes, king of Persia, died 423 before Christ.
Arthur, king of Britain, died about 542, aged 70.
Arundel, earl of, who brought the Arundelian marbles to England, died 1645.
Asaph, St. died 590.
Ascham, the Rev. Roger, born 1515, died 1563.
Ascue, Ann, burnt for heresy, 1546.
Ash, Dr. author of the English Grammar, &c. died aged 55, April, 1775.
Ashmole, Elias, the antiquarian, born 1617, died 1692.
Askew, Dr. Anthony, died Feb. 27, 1774, aged 52.
Asheton, William, first professor of the plan to provide for clergymen's widows, born 1641, died 1711.
Athanasius, St. died May 2, 373, aged 73.
Atkins, sir Robert, died 1709, aged 88.
Attalus, founder of the monarchy of Pergamos, and inventor of parchment, died 198 before Christ.
Atterbury, bishop of Rochester, committed to the Tower, Aug. 24, 1722; exiled May 27, 1723; died February 22, 1731-2, aged 69.
Aubrey, John, the antiquary, born 1626, died 1700.
Augustin St. father of the Latin church, born 354, baptized 387, died 430.

Augustin, St. landed on the Isle of Thanet, 597, made the first archbishop of Canterbury, died 694.
Aurelian, the Roman emperor, the first who wore a diadem, assassinated 257.
Ayliff, sir Joseph, the antiquary, died 1781, aged 72.
Ayscough, George Edward, dramatic writer, died 1779.
Bacon, Francis, lord Verulam, sent to the Tower, 1622; died April 9, 1626, aged 57.
Bagford, John, antiquary, died 1716, aged 65.
Bajazet, Sultan, conquered by Tamerlane, died 1413.
Baker, sir Richard, born 1584, died 1644.
Baker, Thomas, antiquary, born 1656, died 1740.
Baker, Henry, natural philosopher, died 1744.
Baldwin, the emperor, died 1206.
Balchen, admiral, lost in the Victory man of war, 1744.
Bale, bishop of Ossory, the historian, born 1495, died 1563.
Baliol, John, founder of Baliol college, Oxford, died 1269.
Balmerino, lord, beheaded for treason, August 18, 1746.
Balsham, Hugh, founder of Peterhouse, Cambridge, died 1288.
Bancroft, a lord mayor's officer, died worth 30,000*l.* in 1729.
Banks, John, tragic poet, died 1706.
Banks, sir Joseph, president of the Royal Society; died June 19, 1820, aged 80.
Barbarossa, the famous corsair, died 1517, aged 43.
Barclay, Robert, the Quaker, born 1648, died 1690.
Barlow, William, natural philosopher, died 1625.
Barratier, Phil. a Prussian, Hebrew lexicographer before 10 years of age, master of the mathematics at 12, &c. died 1740, aged 19 years 8 months.
Barrington, J. S. philosophical writer, &c. died 1734.
Barrow, the Rev. Dr. Isaac, died 1677, aged 47.
Bartholomew, St. martyred, August 24, 71.
Barton, Elizabeth, Holy Maid of Kent, executed 1534.
Basil, St. died 378, aged 71.
Baskerville, Mr. John, of Birmingham, died Jan. 18, 1775.
Batolozzi, the engraver, died 1815.
Bauchin, John, the botanist, died 1562.
Baxter, the Rev. Richard, born 1615, died 1691.
Baxter, William, died 1723, aged 72.
Bayer, the astronomer, died 1627.
Bayle, Peter, died 1706, aged 59.
Beaumont, Francis, the poet, born 1555, died 1615.
Beaumont, sir John, died 1628.
Becket, Thomas, made chancellor to Henry II. 1157; made archbishop of Canterbury 1162; impeached 1164; retired to France that year; reconciled to Henry, June 2, 1170; murdered in the cathedral church at Canterbury, Dec. 29, 1170; canonized by Alexander III. Ash-Wednesday, 1172; his

bones enshrined in gold set with jewels, 1220; dismantled and stripped of its treasures by Henry VIII. 1541.
Beckford, alderman, died 1770.
Bedell, bishop of Kilmore, born 1570, died 1641.
Bedford, duke of, made regent of France, 1422, died 1435.
Bedloe, Capt. William, famous for his perjury, died 1680.
Belleisle, marshal, and his brother, prisoners at Windsor castle, 1745.
Bellisarius deprived of all dignities 561, died 565.
Belzoni, Signor, the Italian traveller, and antiquary, died 1818.
Benbow, John, a brave English admiral, died 1702.
Benedict, St. founder of the Benedictines, died 546, aged 66.
Bentham, Edward, English divine, and writer of the history of Ely cathedral, died 1776.
Bentley, the Rev. Dr. Richard, born 1662, died 1742.
Berkley, bishop of Cloyne, died 1753, aged 73.
Bernard, St. died 1170.
Bernard, Dr. Edward, the astronomer, born 1638, died 1696.
Bernard's, sir John, statue erected on the Exchange, died 1764, aged 80.
Bertholdus, who discovered gunpowder, died 1340.
Berwick, duke of, killed in a siege. June 12, 1734.
Bettenson, Mrs. left 30,000*l.* to charitable uses; 10,000*l.* of it to Hetherington's charity for the blind, Oct. 28, 1788.
Betterton, the player, born 1635, died April 7, 1710.
Birch, Rev. Dr. died 1766, aged 68.
Biron, duke of, executed in the Bastile, Paris, 1602.
Blackmore, sir Richard, died 1729.
Blackstone, judge, author of the Law Commentaries, born 1723, died February 14, 1780.
Blake, admiral, born 1589, died 1657.
Blake, John Bradley, botanist, born 1745, died 1773.
Blandy, Miss, hanged at Oxford, April 6, 1752.
Blood seized the duke of Ormond, with an intent to hang him at Tyburn, but was prevented Dec. 6, 1670; attempted to steal the crown, May 9, 1671.
Blount, sir Charles, born 1654, died 1693.
Blount, sir Thomas Pope, born 1649, died 1697.
Blucher, prince, the famous Prussian general, died 1819, aged 82.
Bodley, sir Thomas, born 1544, died 1612.
Boerhaave, Dr. died September 23, 1738, aged 69.
Bohemia, queen of, visited England, May 17, 1661, and died here.
Bolingbroke, lord, died 1751, aged 73.
Bonner, bishop of London, born 1512; deprived May 1559, died in the Marshalsea Sept. 5, 1569.
Booth, Barton, the player, born 1681, died May 1733,

Borlase, Rev. William, the antiquary, died 1776.
Borlase, Dr. died April 26, 1776, aged 82.
Boscawen, admiral, died 1761, aged 50.
Boswell, Mr. James, born 1740, died May 19, 1795.
Bougainville, the navigator, killed in Paris, Aug. 10, 1792.
Boulter archbishop of Armagh, who gave 30,000*l.* to charitable uses, died 1742.
Bowles, the widow of West Hannay, Berks, died April 4th, 1749, aged 124.
Bowyer, Mr. the printer, born 1699, died Nov. 18, 1777.
Boyce, Dr. the organist, died Feb. 9, 1779, aged 69.
Boyce, John, one of the translators of the Bible, died 1643.
Boyle, Charles, earl of Orrery, born 1676, died 1731.
Boyle, Richard, earl of Cork, born 1566, died 1632.
Boyle, Roger, inventor of the Orrery, born 1621, died 1679.
Braddock, general, killed at Du Quesne, July 9, 1755.
Bradley, Dr. James, the astronomer, died 1762, aged 70.
Brady, Rev. Dr. Nicholas, born 1659, died 1726.
Bray, Thomas, deviser of propagating the Gospel in foreign parts, born 1656, died 1730.
Brice, Andrew, of Exeter, died Nov. 7, 1773, aged 75.
Bright, Mr. Malden, Essex, died Nov. 10, 1756, weighed 42½ stone.
Briggs, Dr. William, died 1704.
Brindley, Mr. the late duke of Bridgewater's engineer, died Sept. 27, 1772.
Britton, Thomas, the musical small-coal man, died 1714.
Brook, Roger, Halifax, Yorkshire, died Oct. 8, 1568, aged 133.
Brooke, sir Robert, died 1558.
Brooke, lord Fulke Greville, stabbed by his servant, Sept. 30, 1628, aged near 70.
Brooke, John Charles, Somerset herald, crushed to death at the Haymarket theatre, Feb. 3, 1794, aged 45.
Brookey, John, of Bread Rush Common, in Devon, was 135 years old, and was living there July, 1778.
Brown, R. founder of the Brownists, died 1630, aged 80.
Brown, count, celebrated general, slain 1757, aged 52.
Brown, sir Thomson, physician, antiquary, &c. died 1682.
Brown, Moses, a divine, born 1703, died 1757.
Brown, Isaac Hawkins, the poet, born 1706, died 1760.
Brown, sir William, physician, born 1692, died 1774.
Bruce, Robt. Scotch general and king, 1306, died 1329.
Bruno, founder of the Carthusians, died 1101, aged 71.
Brunswick, Duchess, mother to Queen Caroline of England, died March 23, 1813, aged 76.
Brutus, Marcus, died 24 before Christ, aged 43.
Buchanan, George, born 1506, died 1582.

Buckingham, duke of, killed at Portsmouth by Felton, August 23, 1689, aged 35.
Buckingham, George Villiers, duke of, born 1627, died 1688.
Buckingham, John Sheffield, duke of, born 1649, died Feb. 24, 1721.
Burgh, James, ingenious Scotch author, died 1775.
Burgo Luc. de, the first European writer on algebra, died 1494.
Burkitt, Rev. William, born 1650, died 1703.
Burleigh, lord Exeter, made minister of state to queen Elizabeth, 1560, died 1598.
Burnam, Peter, the commentator, died 1741.
Burnett, bishop of Sarum, born 1643, died 1715.
Burrow, sir James, law-writer, died 1782.
Busby, Rev. Dr. Richard, born 1606, died 1695.
Byng, admiral; tried at Portsmouth and condemned, January 28, 1757; shot at Spithead, March 14, 1757.
Byrom, John, inventor of short-hand, born 1691, died 1763.
Byron, lord, tried for murder, and acquitted, April 16, 1765.
Cade, Jack, the rebel, killed by Alexander Iden, 1451.
Cadmus, the first king of Thebes, 1092 before Christ.
Cæsalphinus, Andrew, the sysmatic writer on Botany, born 1519, died 1603.
Cæsar, after fighting fifty pitched battles, and slaying 1,192,000 men, was killed in the senate-house, 44 before Christ.
Cæsar, sir Julius, the antiquary, died 1639.
Calepini, Amb. the lexicographer in eight languages, died 1510.
Caligula, died 41, aged 29.
Callimachus, the inventor of wildfire, died 670.
Callimachus, the inventor of the Corinthian order in architecture, flourished 540 before Christ.
Calvert, Bernard, of Andover, went from Southwark to Calais, July 17, 1720, in one day, and returned the same evening.
Calvin, died at Geneva, May 27, 1654, aged 45.
Cambray, Fenelon, archbishop of, died 1716, aged 64.
Cameron, Dr. Archibald, executed at Tyburn, 1753.
Cameron, Mary, died at Inverness, aged 130, May, 1785.
Campbell, Dr. (the author) died Dec. 20, 1775, aged 67.
Candaules, king of Lydia, 735 before Christ.
Candiac, John James, knew his letters at 13 months old; at 7 years master of Latin, Greek, Hebrew, &c. died 1726, aged but 7.
Canning, Elizabeth, tried and transported, 1754, died 1773.
Canton, John, natural philosopher, born 1718, died 1772.
Caractacus, king of the Britons, carried prisoner to Rome, in 52.
Caradoc, of Llancarvon, the Welsh historian, died 1157.
Carran, the Right Honourable John Philpot, died 1817.
Cary, Harry, musician, poet, &c. died 1744.
Carlos, Don, prince of Spain, poisoned by order of his father, through jealousy, 1568.

Casimir III. of Poland, died 1370.
Caslon, William, letter-founder, died Jan. 24, 1766; aged 74.
Catharine de Medicis, died 1589.
Cato killed himself, Feb. 5, 45 before Christ, aged 48.
Cavallerius, Bon. inventor of indivisibles, died 1647.
Cave, Edward, the compiler of the first periodical magazine, born 1691, died 1754.
Cavenden, Thomas, British circumnavigator, died 1592.
Cavendish, W. duke of Newcastle, (author,) died 1676.
Caverley, sir Hugh, the first person who used guns for the service of England, died 1389.
Caxton, William, the first printer in England, 1474, died 1491, aged 70.
Cecrops, first king of Athens, 1556 before Christ.
Chambers, Ephraim, author of the Dictionary, died 1740.
Chambers, sir William, architect, died March 2, 1796.
Chandler, Samuel, dissenting divine, died 1766.
Charlemagne, died 813, aged 74.
Charles XII. of Sweden, killed at Frederickshall, in Norway, November 30, 1718, aged 36.
Charles IV. king of Spain, dethroned by his son Ferdinand, who afterwards are both compelled to resign the kingdom to Napoleon I, 1808.
Chatterton, Thomas, poet, born 1752, died 1770.
Chaucer, Geof. born 1328, died 1409.
Chenevaux, Dr. Richard, the good bishop of Waterford, died August 11, 1779.
Cheselden, William, the anatomist, died 1752.
Cheyne, George, the physician, died 1748.
Chichely, Henry, founder of All Souls college, Oxford, archbishop of Canterbury, died 1443.
Christiana, queen of Sweden, resigned the crown, June 6, 1654; died at Rome, April 9, 1689.
Christophe, the Black king of Hayti, died by his own hand, Oct. 8, 1820.
Chub, Thomas, English philosopher, died 1747.
Chudleigh, lady, born 1656, died 1710.
Churchill, Rev. Charles, born 1731, died 1764.
Churchyard, Thomas, died about 1750.
Cibber, Mrs. the actress, died 1766, aged 57.
Cibber, Colley, born 1671, made poet-laureat, 1730, died 1757.
Cicero born 107, made an oration against Verres 70, his second oration against the Agrarian law, and banished, April, 58; put to death 43 before Christ, aged 64.
Cincinnatus Quinctius, made dictator of Rome from the plough, born 456 before Christ.
Clarence, duke of, brother to Edward IV. murdered in the Tower, 1478, aged 27.

Clarendon, Hyde, earl of born 1612; banished December 12, 1667; died December 7, 1674.
Clarke, Rev. Dr. Samuel, born 1675; died May 17, 1729.
Cleopatra, queen of Egypt, 50, killed herself 20 before Christ, aged 41.
Cleveland, John, popular poet, died 1658.
Clifford, George, earl of Cumberland, died 1605.
Clive, Mrs. Catherine, the actress, died 1785.
Clive, lord, defeated the Nabob, June 26, 1757; created a peer, 1762; killed himself, Nov. 1774, aged 39.
Clum, Mrs. near Litchfield, died January 23, 1772, aged 138, and had lived 103 years in one house.
Cockaine, sir Aston, born 1608, died 1683.
Cockburn, Catharine, died May 11, 1749.
Codrington, Christopher, died 1716.
Codrus, the last Athenian king, voluntarily gave his life for the good of his country, after reigning 21 years, 1095 before Christ.
Cohorn, Mich. engineer, died 1704.
Coke, lord chief justice, born 1549, died 1634.
Colbert, J. B. French statesman, died 1683.
Coles, Elisha, the grammarian, died 1680.
Colet, Dr. John, founder of St. Paul's school, died 1519.
Coligni, admiral, killed 1572.
College, Stephen, hanged at Oxford, August 18, 1611.
Collier, Rev. Jeremiah, born 15650, died 1729.
Collins, John, mathematician, died 1683.
Collinson, Peter, botanist, died 1786.
Colnet, James, first explorer of the Western coast of Japan, 1791.
Colson, John, of Cambridge, died 1761, aged 80.
Colston, Edward, the institutor of several charitable benefactions, died 1721.
Columbus, Christopher, died 1506, aged 56.
Congreve, William, born 1672, died 1729.
Constantius, emperor of Rome, died at York, 306.
Constantine the Great, died 337, aged 66.
Cook, capt. James, the navigator, killed Feb. 14, 1779.
Cooke, sir Anthony, learned lawyer, died 1576.
Cooper, Thomas, bishop of Winchester, chronologist, died 1549.
Copernicus, of Thorn, in Prussia, died 1543, aged 70.
Coram, captain Thomas, projector of the foundling-hospital, died March 29, 1751, aged 84.
Corbet, bishop of Norwich, English poet, died 1635.
Corelli, Signora, the learned Italian lady, received the triumph of a coronation at Rome, July 31, 1776.
Corelli, the musician, died 1733.
Coriolanus banished from Rome, 491 before Christ.

Corneille, Peter, dramatic poet, died 1684, aged 78.
Cornish, an alderman of London, hanged and quartered, October 28, 1685.
Cortes, Ferdinand, died 1547, aged 62.
Coryate, Thomas, the traveller, died 1617.
Cosmo de Medicis, died 1464, aged 75.
Costard, George, astronomical writer, died 1782.
Cotes, Roger, the mathematician, died 1716.
Cotton, sir Robert, the antiquary, died 1631, aged 60.
Coventry, sir John, maimed or defaced, Dec. 25, 1670.
Cowper, William, anatomist, died 1698.
Cox, bishop, translator of the Bible, died 1581.
Cranmer, archbishop of Canterbury, introduced to King Henry VIII. 1529; burnt at Oxford, March 21, 1556.
Creech, Rev. Thomas, born 1659, destroyed himself 1702.
Crisp, Ed. of Bury, in Suffolk, cut and mangled 1729.
Crœsus, king of Lydia, flourished 562 before Christ.
Cromwell, lord, made vicar-general, October, 1538; beheaded July 28, 1540.
Crook, Japhet, his ears cut off in the pillory, 1731.
Croxal, Rev. Dr. Samuel, died, 1751.
Cruden, Alexander, author of the Concordance, died 1770.
Cudworth, Rev. Ralph, born 1617, died 1688.
Cullen, Dr. William, of Edinburgh, died February 5, 1790, aged 80.
Cullen, Dr. Henry, of Edinburgh, died October 11, 1790.
Cumberland, Richard, critical author, died 1718.
Cunningham, Mr. the poet, died 1773.
Curtius, M. rode into a gulph at Rome, 362 before Christ.
Curtius, Quintus, lived in 64.
Cyprian, St. martyred 258.
Dædalius, the architect, flourished 987 before Christ.
D'Alembert, Monsieur, the mathematician, died October 27, 1783.
Damm, Thomas, of Leighton, near Minchnal in Cheshire, died 1648, aged 154.
Dampier, William, the navigator, died 1699.
Danchet, Anthony, French poet, born 1671, died 1748.
Daniel sent captive to Babylon, 606; interpreted Nebuchadnezzar's dream, 603; cast into the lion's den, 538; predicted the Persian empire, 534, before Christ.
Darius, the Mede, king of Assyria, 538 before Christ.
Darius, the last king of Persia, slain 330 years before Christ.
Darnley, lord, married Mary queen of Scots, 1561; murdered and blown up, Feb. 10, 1567.
Davenant. sir William, dramatic poet, 1668.
David succeeded Saul in Israel, 1055; committed adultery with Bathsheba, 1035; married her, 1033; died 1015, before Christ.

David, king of Scotland, died in London, Feb. 22, 1371.
Davies, Rev. Dr. John, born 1679, died 1732.
Davies, John, English navigator, died 1685.
Day, John, printer, the first introducer of the Greek and Saxon characters into England, died 1584.
Death, captain, killed in an engagement, December, 1777.
Decker, Thomas, contemporary with Ben Johnson.
Defoe, Daniel, author of Robinson Crusoe, died 1731.
Demoivre, celebrated mathematician, died 1754.
Demosthenes, recalled from banishment, 322; poisoned himself 313 before Christ, aged 60.
Demster, Thomas, historian and commentator, died 1625.
Denham, sir John, born 1615, died 1659.
Derham, Dr. William, born 1657, died April, 1735.
Deering, sir Cholmley, killed in a duel, May 9, 1711.
Derick, Samuel, master of the ceremonies at Bath, died 1769.
Derwentwater, earl of, and lord Kenmuir, beheaded on Tower hill, Feb. 24, 1716.
Descartes, born at Touraine, 1556, died 1650.
Desmond, Thomas, earl of, beheaded in Ireland, 1468.
D'Ewes, sir Symond, born 1602, died 1650.
De Wit, John, statesman, born 1625, died 1662.
Dias, Michael, the navigator, died 1512.
Dido, flourished 833 before Christ.
Digby, sir Everard, born 1581; hanged with other conspirators in the gun-powder plot, January 30, 1606.
Digby, sir Kenelm, born 1603, died 1665.
Digges, sir Dudley, statesman, died 1639.
Dillenius, John James, professor of Botany, at Oxford, died 1747.
Diogenes, the cynic, died 324 before Christ, aged 89.
Dionysius, tyrant of Syracuse, died 368 before Christ.
Diophantus, the first writer on algebra, 365.
Dodd, Rev. Dr. executed for forgery, June 27, 1777.
Doddridge, Dr. died October 26, 1751, aged 50.
Dodsley, Robert, poet, died 1764, aged 79.
Dodsworth, Roger, antiquary, died 1654, aged 79.
Dogget, Thomas, the actor, died 1721.
Dolon, the first comic actor, flourished 562 before Christ.
Donne, Rev. Dr. John, died 1531, aged 58.
Doria, Andr. Genoese admiral, died 1560, aged 84.
Drake, sir Francis, set sail on his voyage round the world, 1577; died January 28, 1595, aged 50.
Drakenburgh, Mr. Ch. Jacob, died in Denmark, aged 146, 1770.
Drummond, William, the poet, born 1586, died 1649.
Dryden, John, born 1613, died May 1, 1700.
Ducarel, Dr. Andrew Cultee, the antiquary, died, aged 72, May 29, 1785.

Duck, Rev. Stephen, drowned himself, 1756.
D'Udine, reviver of stucco-work, born 1494, died 1564.
Dudley, duke of Northumberland, (whose son married lady Jane Grey,) beheaded on Tower-hill, Feb. 12, 1554.
Dudley, Edmund, beheaded, August, 1510, aged 48.
Dugdale, sir William, born 1605, died 1685.
Duncan, king of Scotland, murdered by Macbeth, 1054.
Duncombe, William, dramatic author, died 1769, aged 80.
Dunstan, St. died 988.
Durell, John, English divine, died 1683.
Dyer, John, English poet, born 1700.
Echard, Rev. Dr. John, born 1615, died 1696.
Echard, Rev. Laurence, the historian, born 1671, died 1730.
Edwards, William, died at Caereu, near Cardiff, in Glamorganshire, in 1668, aged 168.
Edwards, Thomas, English critic, died 1757.
Egialeus, king of Sycion, 2089 before Christ.
Ellenborough, lord, died 1818.
Eli, the eleventh judge of Israel, broke his neck at Shiloh, 1116 before Christ, aged 98.
Elijah prophesied 911; supported by the widow of Sarepta, 910; taken up into heaven 896, before Christ.
Elisha died 830 before Christ, having prophesied 60 years.
Elliot, sir John, the English physician, died 1787.
Ellis, M. W. died at Liverpool, August 1780, aged 130 years and 6 months.
Elizabeth, queen of England, died 1603, aged 70, after a reign of 44 years, 4 months, and 8 days.
Elstob, William, Saxon scholar, died 1714.
Elzevir, Lewis, a Dutch printer, flourished 1598.
Emma, mother of Edward the Confessor, accused of incontinency, 1042; stripped of her possessions, 1043; sent to Wirwall nunnery, 1051.
Empson beheaded on Tower-hill, August 28, 1510.
Eneas, the Trojan general, died 1177 beforeChrist.
Ennius Quintus, born 239 before Christ, died aged 70.
Enoch translated into heaven 987 of the world, aged 365.
Epaminondas, Theban general, slain 363 before Christ.
Epicurius born 342, died 270 before Christ.
Epimethius, the inventor of earthen vessels, died 171 before Christ.
Epiphanus, born in Palestine about 332, died 403.
Erasmus, born at Rotterdam, 1467, died 1536.
Esop died 556 before Christ.
Essex, Cromwell, earl of, beheaded, July 28, 1540.
Essex, Devereux, earl of, beheaded, July 25, 1601.
Estcourt, Richard, dramatic author, died 1713, aged 48.
Etheridge, sir George, born about 1638, died 1689.

Euclid died about 280 before Christ, aged 74.
Eugene, prince, commanded at the battle of Hochstet, August 5, 1704; victorious at Turin, September 7, 1706; victorious at Oudenard, 1708; wounded before Lisle, 1708; defeated the Grand Vizier, at Peterwarden, Aug. 5, 1716; died April 13, 1735, aged 73.
Euripides died 407 before Christ, aged 77.
Eusden, Rev. Laurence, died Sept. 27, 1730.
Evagrius, ecclesiastical historian, flourished 380.
Evelyn, John, born 1620, died 1706.
Evremont, St. died Sept. 2, 1703.
Exeter, marquis of, lord Montague, and sir Nicholas Carew, beheaded December 31, 1558.
Fairbrother, Mr. died at Wigan, in Lancashire, aged 138, 1770.
Fairfax, Edward, the poet, lived in the reign of James I.
Fairfax, sir Thomas, the general, died 1671.
Falkland, Lucius, lord, born 1610; killed at the battle of Newbury, September 1643.
Fancourt, Samuel, the first promoter of circulating libraries, died 1768.
Fanshaw, sir Richard, born 1607, died 1666.
Farinello, C. B. an Italian singer, born 1705, living 1776.
Farmer, Hugh, theologician, died 1787, aged 73.
Farquhar, George, born 1677, died 1707.
Falstaffe, sir John, died 1549, aged 80.
Faulkner, George, of Dublin, printer, died 1775.
Faust, or Faustus, John, claimant of the invention of printing, died 1466.
Faux, Guy, executed in parliament-yard, Jan. 31, 1606.
Fawkes, Francis, English poet, died 1777.
Fenelon, archbishop of Cambray, died 1716.
Fenn, sir John, died Feb. 14, 1764, aged 55.
Fenton, Elijah, died July 12, 1730.
Fenton, sir Geoffrey, died 1608.
Fenwick, sir John, beheaded on Tower-hill, 1697.
Ferdinando, marquis de Paleotti, brother to the duchess of Shrewsbury, hanged for murder, at Tyburn, Feb. 28, 1617-18.
Feguson, James, the astronomer, died Nov. 16, 1776.
Ferrar, bishop of St. David's, burnt at Carmarthen, 1555.
Ferrars, Lawrence, earl, committed to the tower for murdering his steward, Feb. 13, 1759-60; tried and condemned April 18; hanged at Tyburn, May 5, 1760.
Fiddes, Rev. Dr. Richard, born 1671, died 1725.
Field, Richard, theological writer, died 1616.
Fielding, Henry, died 1754, aged 47.
Fielding, sir John, died September 6, 1780.
Finet, Sir Jon, English wit, born 1571, died 1640.
Fingal, the Caledonian, died 283.

Firmin, Thomas, the patriotic citizen of London, died 1697.
Fish, Simon, English reformer, died 1571.
Fisher, bishop of Rochester, beheaded June 22, 1535.
Fitzgerald, with five of his uncles, Irish rebels, executed at Tyburn, Feb. 3, 1537.
Fitzgerald, George Robert, hanged at Castlebar, June 12, 1786.
Fitzherbert, sir Anthony, eminent English judge, died 1538.
Fitzjames, James, duke of Berwick, slain at Philipsburgh, 1734.
Flamstead, John, astronomer, born 1646, died 1719.
Flecknoe, Richard, English dramatist, flourished 1644.
Fleetwood, William, English law author, died 1593.
Fleetwood, William, bishop of St. Asaph, antiquary, died 1723.
Fletcher, John, dramatic writer, born 1576, died 1625.
Fletcher, Rev. John, eminent for his piety, and polemical writings, born Sept. 12, 1729; died August 14, 1785, aged 56.
Folkes, Martin, antiquary, died 1754, aged 64.
Fontanelle, died Jan. 9, 1757, aged 100.
Foote, Samuel, the English Aristophanes, died October 21, 1777, aged 59.
Forbes, John, bishop of Aberdeen, died 1648.
Fordyce, David, professor of philosophy, died 1755.
Forest, John, burnt in Smithfield, for denying the king's supremacy, May 22, 1538, aged 42.
Fortescue, sir John, died 1465.
Forthorn, James, aged 127, died at Grenada in the West Indies, Feb. 10, 1773.
Foster, Dr. James, the anabaptist, born 1696, died 1753.
Foster, Samuel, the mathematician, died 1652.
Fothergill, Dr. died December 26, 1780, aged 69.
Foucquet, marshal Belleisle, died 1761.
Fontaine, sir Andrew, English antiquary, died 1753.
Fournier, P. S. the Parisian letter-founder, died 1768.
Fowler, Edward, bishop of Gloucester, theologian, died 1714.
Fox, right honourable Charles James, eminent orator, and statesman, born January 13, 1749; died September 13, 1806, aged 57 years and 9 months.
Fox, George, founder of the Quakers, lived in 1655.
Fox, John, martyrologist, born 1517, died 1587.
Francis, St. died 1227, aged 46.
Franklin, Dr. Benjamin, died in Philadelphia, April 17, 1790, aged 84.
Friend, Dr. John, born 1675, died 1728.
Froben, John, an eminent German printer, died 1517.
Frobisher, Martin, admiral, died 1594,
Fryth, John, burnt in Smithfield, July 4, 1533.
Fuller, Rev. Dr. Thomas, born 1606, died 1661.
Furst, Walter, Swiss patriot, flourished 1310.
Galba, the Roman emperor, died 69, aged 73.

Gale, Rev. Dr. John, born 1680, died 1721.
Galen, born at Pergamos, about 131, died 201.
Gamaliel, chief of the synagogue, died in 53.
Gambol, John, eminent Moravian bishop, died 1771.
Gardiner, bishop of Winchester, died October 22, 1555.
Garnat, Thomas, a Jesuit, hanged 1608.
Garrick, David, the English Roscius, died January 20, 1779, aged 62 years, first appeared on the London stage in 1741.
Gascoigne, George, inventor of the telescopic sights, died 1645.
Gascoigne, sir William, judge, who committed the prince of Wales, for insulting him on the bench, died 1413.
Gaunor, Fychan, died September 16, 1686, at Abercowarch, near Dinas Moddway, in Merionethshire, aged 140.
Gay, John, born 1688, died 1732.
Ged, William, an improver in printing, died 1749.
Geminiani, the musician, died 1762, aged 96.
Gengiskhan, the illustrious warrior, died 1226.
Gent, Mr. of York, the printer, died 1778, aged 87.
Gerbert, afterwards pope Sylvester II. introduced the Arabic figures into Europe, about 1000.
Gifford, Andrew, eminent dissenting divine, died 1784, aged 84.
Glauber, the chemist, died 1660.
Gloucester, duke of, uncle to Richard II. smothered between two feather-beds, February 28, 1397.
Gloucester, Humphrey duke of, fourth son of Henry IV. murdered and buried at St. Alban's, 1447.
Gloucester, Richard duke of, brother to Edward IV. murdered Edward prince of Wales, 1483; drowned the duke of Clarence, his brother, in a butt of Malmsey wine, 1478.—Vide Richard III. page 395.
Goddard, Jonathan, first promoter of the Royal Society, died 1674.
Godwin, earl of Kent, invaded England, 1052; tried for the murder of Alfred the same year, and bought his pardon; choaked in protesting his innocence at table with the king, 1053.
Goldsmith, Dr. Oliver, died April 4, 1774, aged 46.
Goodier, captain, hanged at Bristol, for the murder of his brother, sir John Goodier, Jan. 20, 1740-1.
Gower, sir John, first English poet, died 1404.
Graham, George, improved clocks, and invented the compound pendulum, 1751.
Granger, Rev. Mr. died suddenly, as he was administering the sacrament, April 5, 1776.
Grandier, burnt in France, for witchcraft, 1634.
Gray, Thomas, the poet, died July 30, 1771, aged 54.
Gregory, St. died 270, after 30 years' episcopacy.
Gresham, sir Thomas, died 1580.

Greville, Fulke, lord Broke, born 1544; killed by his servant, Sept. 30, 1628, aged 74.
Griesbach, Professor, died March 24, 1821.
Guise, duke of, murdered 1558.
Gunter, Rev. Edm. the mathematician, died 1726, aged 46.
Gurney, William, the short-hand writer, died 1770.
Gustavus Adolphus, king of Sweden, killed in battle, Nov. 6, 1682.
Gustavus III. king of Sweden, shot at a masquerade by a discontented officer, March 16, 1792.
Gustavus Vasa, died 1650, aged 70.
Guthrie, Mr. William, died 1770.
Guttemberg, John, one of the candidates for the invention of printing, at Mentz, in Germany, died 1467.
Guy, Thomas, bookseller, died Dec. 27, 1724, aged 79, and left 200,000*l.* for maintaining his hospital.
Hacket, William, the fanatic, hanged July 28, 1592.
Hale, sir Matthew, died Dec. 25, 1676, aged 66.
Hales, judge, committed to the Marshalsea, 1553.
Hall, bishop of Norwich, died 1659, aged 82.
Halley, Edmund, born 1656, died 1742.
Hampden, born 1594, killed in battle June 24, 1643.
Hamilton, duke of, and others, executed 1649.
Hamilton, duke of, and lord Mohun, killed in a duel in Hyde-park, Nov. 15, 1712.
Hampton, the translator of Polybius, died 1778.
Handel, George Frederic, died April 12, 1759, aged 74.
Hano, flourished 453 before Christ.
Hardicanute, died 1041; with him ended the monarchy of the Danes in England.
Harcourt, earl of, drowned in a well in Oxfordshire, September 17, 1777.
Harley, Robert, earl of Oxford, born 1661, stabbed at the council-board, March 8, 1711, died 1724.
Harpe, Frederic, died at Fish-hill, Cumberland, February 1792, aged 120.
Harrison, Mr. John, inventor of the watch for discovering the longitude, died March 24, 1776, aged 84.
Harvey, William, who discovered the circulation of the blood, born 1578, died 1657, aged 79.
Hastings, lord, put to death in the Tower, June 13, 1483.
Hatton, sir Christopher, made lord chancellor, being the first that was neither priest nor lawyer that held that office, 1583, died 1591.
Hawkins, sir John, English admiral, died 1595.
Hawkins, sir Richard, the navigator, died 1600.
Hawkesworth, Dr. John, died Nov. 17, 1773, aged 50.
Hayes, Catharine, hanged for the murder of her husband, April 20, 1726.

Haywood, Mr. Justice, stabbed in Westminster-hall, by a papist, 1640.
Head, Richard, cast away at sea, 1678.
Hearn, Thomas, Esq. antiquarian, died 1817, aged 73.
Heathfield, lord, died July 5, 1790, aged 72.
Hector, the Trojan general, died 1184 before Christ.
Heinetken, Christopher, the learned prodigy, of Lubec, was master of several languages at four years old, when he died, 1725.
Helen, rape of, by Paris, 1198 before Christ.
Henderson, hanged for murdering Mrs. Dalrymple, March 25, 1746.
Henderson, John, eminent English actor, died 1785, aged 38.
Henley, John, orator, died Oct. 14, 1756.
Henry III. of France, mudered by a monk, August 1, 1589.
Henry IV. of France, killed by Ravilliac, May 14, 1610.
Henry, Matthew, English dissenting writer, died 1714.
Herod reigned in Judea 55; put his wife Mariamne to death, and his mother-in-law Alexandria, 28; his two sons put to death by order of the Jewish council, 6 years before Christ; died Nov. 25, 4 before the vulgar æra of Christ.
Herring, archbishop of Cantsrbury, died 1757.
Hervey, James, English divine and poet, died 1758.
Hetherington, Rev. William, died December 2, 1778, who left 20,000*l.* for a fund to relieve 50 blind persons, each with 10*l.* annually.
Hicks, William, left 300*l.* per annum to the Marine Society, died 1763.
Hill, Aaron, born 1685, died February 8, 1750.
Hippocrates, died 361 before Christ, aged 98.
Hoadley, bishop of Winchester, died 1761.
Hollingshead, the author, died 1580.
Holt, lord chief justice, died March 6, 1710, aged 67.
Holland, Charles, English actor, died 1769.
Homer, born about 1041, flourished about 907 before Christ.
Hood, Robin, and Little John, noted highwaymen, 1189.
Hooke, Robert, inventor of the pendulum watches, born 1635, died 1703.
Hooper, bishop of Gloucester, burnt Feb. 4, 1555.
Hopkins, bishop of Londonderry, born 1638, died 1690.
Horace, born, 65, died 8 before Christ.
Horrex, Jer. the astronomer, born about 1619, died 1641.
Horsley, Samuel, bishop of St. Asaph, died 1806.
Hosier, English admiral, died 1722.
Hotham, sir John, and his son, beheaded, Jan. 1, 1645.
Hotspur, Henry Percy, killed July 22, 1403.
Howard, Mr. philanthropist, died Jan. 20, 1790.
Howe, lord viscount, slain in America, July 8, 1758, aged 34.
Hudson, Henry, celebrated English navigator, died 1611.

Hume, David, died August 25, 1776, aged 65.
Hunter, John, the anatomist, died Oct. 16, 1793, aged 60.
Hunter, Dr. William, the anatomist, died 1783.
Hunter, Dr. William, died 1815.
Huntingdon, William, the famous coal-heaver preacher, died, July 1, 1813, aged 69.
Huss, John, the martyr, burnt July 15, 1415.
Hutton, William, Esq. historian of Birmingham, and author of many works, an extraordinary genius, died 1815, aged 92.
Hyde, Dr. Thomas, the first librarian of the Bodlean library, died Feb. 18, 1703.
Hyginus, bishop of Rome, the first pope, martyred 158.
Ignatius, made bishop by Peter and Paul, died 107.
Ignatius, Loyola, founder of the Jesuits, born 1491, died 1556, canonized by Paul V. 1609.
Ilive, Jacob, English printer, died 1763.
Inachus, first king of Argos, 1859 before Christ.
Innocent XI. pope, died August 2, 1689.
Isaac, Abraham's son, died 1717 before Christ, aged 180.
Isaiah began to prophesy 786, put to death 696 before Christ.
Isocrates, Athenian orator, died 338 before Christ, aged 89.
Jacob stole the blessing from Esau 1776, went into Egypt 1728, and died 1689 before Christ, aged 147.
James, St. put to death 41, made patron to Spain 796.
James, St. the Less, bishop of Jerusalem, martyred 62.
James I. of Scotland, murdered by his uncle 1437.
James III. of Scotland, killed by his nobility 1487.
James IV. of Scotland, killed September 9, 1513.
Jansen, sir Stephen Theodore, died April 7, 1777.
Jason, flourished 937 before Christ.
Jefferies, lord chief justice, sent to the tower by the lord Mayor of London, Dec. 12, 1688, where he destroyed himself, April 18, 1689.
Jefferies, Miss, and Swan, hanged for the murder of her uncle, at Chelmsford, March 11, 1751-2.
Jefferies, George, English dramatic poet, died 1755.
Jenkins, Henry, of Yorkshire, died 1670, aged 169.
Jephthah took his rash vow 1817, died 1182 before Christ.
Jeremiah began to prophecy 629, foretold the Jewish captivity 607, and died 577 before Christ.
Jerome, St. born 329, died 420.
Jerome of Prague, burnt May 30, 1416.
Jesus, son of Sirach, lived 247 before Christ.
JESUS CHRIST was born on December 25, in the year of the world 4004, died April 3.
Joan d'Arc, or the Maid of Orleans, burnt 1451, aged 24.
Joanna of Naples. strangled her husband, Oct. 5, 1345.
Joan, pope, died 857.

Job, died 1553 before Christ, aged 189.
Joel prophesied 800 before Christ.
John, king of France, taken prisoner by Edward the Black Prince, and brought to England, afterwards ransomed for 500,000*l.* 1357; died at the Savoy, Strand, London, on a visit, 1364.
John of Gaunt, 4th son of Edward III. was born 1339; created duke of Lancaster 1362; appointed regent to Richard II. 1377; supported Wickliffe against his opposers 1378; had his palace at the Savoy destroyed by Wat Tyler's mob 1381; ravaged Scotland to the gates of Edinburgh 1384; assumed the title of king of Castile and Leon, having married the daughter of Peter the Cruel, 1385; died February 1399.
John, St. the Baptist, died 32.
John, St. the Evangelist, died Dec. 27, 99, aged 91.
Johnson, Dr. Samuel, the lexicographer, died Dec. 14, 1785, aged 78.
Johnson, Rev. Samuel, degraded and whipped from Newgate to Tyburn, Dec. 1, 1686.
Johnson, Rev. John, born 1662, died 1692.
Johnson, Ben, died 1637, aged 64.
Jones, Inigo, born 1572, died 1651.
Jordan, Mrs. Mother of the duke of Clarence's children, died in obscurity in Paris, 1816.
Joseph and Mary, with Jesus, return to Nazareth 3 years before the common æra.
Joseph sold to the Egyptians 1728; tempted by Potipher's wife 1718; made governor of Egypt 1715; died in Egypt 1635, before Christ, aged 110.
Joseph II. emperor of Germany, poisoned March 1, 1792.
Josephus, Flavius, Jewish historian, died 93.
Julian the apostate, sent a vicar into Britain 358, died 363, aged 31.
Julius Cæsar, born July 10, 100; landed at Deal, August 26, 55; killed March 15, 44 years before Christ.
Justin, St. died 163, aged 64.
Juxon, William, archbishop of Canterbury, died 1663.
Kelly, Hugh, dramatic author, died 1717.
Kempis, Thomas-a, died 1471.
Kent, the maid of, executed at Tyburn 1534.
Kent, William, English architect, 1748.
Keysler, J. G. historian and traveller, died 1743.
Kidder, bishop of Bath, and his lady, killed in bed by the fall of a stack of chimnies, 1703.
Killegrew, sir William, born 1605, died 1693.
Kilmarnock, lord, and lord Balmerino, beheaded August 18, 1746.
King, captain, the companion of captain Cook, died Nov. 1784.
King, John Glen, English topographer, died 1787, aged 55.
King, archbishop of Dublin, born 1650, died 1729.

Kippis, Dr. Andrew, died October 3, 1795, aged 71.
Kirby and Wade, sea captains, shot at Plymouth, 1703.
Knight, Mr. cashier of the South-sea company, absconded with 100,000*l.* 1720; compounded with government for 10,000*l.* and returned to England in 1743.
Knox, John, the reformer, born 1515, died 1572.
Knutzen, Matthias, the professed German atheist, living in 1674.
Kouli Khan, usurped the Persian throne, March 11, 1732; assassinated June 8, 1747, by his nephew.
Knucknell, John, eminent chemist, died 1702.
Lactantius, flourished 323.
Lamb, Dr. murdered in London, June 24, 1628.
Lansdown, George, born about 1667, died 1736.
Langbaine, Gerard, English dramatic writer, died 1656.
Langeland, Robert, old English poet, died 1369.
Langhorne, Dr. John, the writer, died Sept. 1, 1779.
Latimer, bishop of Worcester, burnt at Oxford, Oct. 1555.
Laud, archbishop, beheaded Jan. 10, 1645, aged 71.
Lauderdale, duke of, died August 24, 1682.
Law, John, the bubble projector of France, died 1729.
Law, Edmund, bishop of Carlisle, theological writer, died 1789.
Layer, counsellor, hanged for treason, March 17, 1722.
Lazarus raised from the dead 33, died Dec. 17, 1763.
Lake, sir John, English admiral, died 1720.
Leake, Richard, eminent seaman, died 1686.
Leake, Stephen Martin, heraldric writer, died 1773.
Lee, archbishop of York died 1544, aged 62.
Lee, Nathaniel, flourished 1690, aged 33.
Lee, the Rev. Mr. who invented the stocking-frame, resided at Cambridge 1589.
Leicester Dudley, earl of, born 1532, died 1588.
Leigh, John, English dramatic writer, died 1726.
Leland, John, the antiquary, died 1552, aged 45.
Leland, Dr. died Jan. 16, 1766, aged 73.
Leland, William of Ireland, died Jan. 1732-3, aged 139.
Lenox, earl, regent of Scotland, murdered 1751.
Leo I. emperor, ordered 200,000 books to be burnt, 476.
Leo IX. the first pope that kept an army, 1054.
Leofricus, the first bishop of Exeter, died 1073.
Lesley, bishop of Ross, born 1527, died 1596.
Lesley, the great writer, died April 13, 1722.
Lestock, admiral, tried and acquitted, June 1746.
Lever, sir Ashton, collector of the Museum, died Jan. 30, 1788.
L'Estrange, sir Roger, born 1617, died Dec. 11, 1704.
Llewellin, last prince of the Welsh, defeated 1284.
Llewellin, Martin, died 1682, aged 65.
Lewis XV. of France, narrowly escaped being burnt, July 1, 1747; stabbed by Damien, Jan. 1757; died May 10, 1774, aged 64; reigned 29 years.

Lewis XVI. deposed August 10, 1792; beheaded Jan. 21, 1795, and his queen beheaded October 16, following.
Lewis, Rev. Mr. the historian and antiquary, died Jan. 16, 1746, aged 73.
Lightfoot, Rev. Dr. John, born 1601, died 1675.
Lisburne, John, whipped Feb. 19, 1638, died August, 1657.
Lillio, Aloys, inventor of the Gregorian calendar, 1570.
Lilly, John, flourished 1595.
Lilly, William, the astrologer, born 1602, died 1681.
Lilly, William, the grammarian, died 1523, aged 55.
Linnacre, Thomas, English physician and philosopher, died 1524.
Linnæus, Dr. the botanist, died at Upsal, in Sweden, Jan. 10, 1778, aged 71.
Lisle, lady, beheaded at Winchester, September 2, 1585.
Lisle, William de, eminent Geographer, died 1726.
Littleton, Rev. Adam, born 1627, died 1694.
Livius, Titus, born 58 before Christ, died in 18.
Lloyd, Nich. eminent divine and writer, died 1680.
Lloyd, Mr. the poet, died 1764.
Llwyd, Edward, English antiquary, died 1709.
Lobb., Theoph. English physician and author, died 1763.
Locke, John, born 1632, died Nov. 28, 1704.
Lodge, Thomas, died 1625.
Lollard propagated his opinions 1315; burnt 1351.
Lombard, Peter, flourished 1158.
Lumbe, sir Thomas, introducer of the silk-mill, died 1739.
Long, Dr. Roger, of Cambridge, died 1771, aged 91.
Longbeard, William Fitz-Osbert, a notorious ruffian, hanged at Tyburn, 1197.
Longinus, the orator, put to death, 273.
Lovat, lord, beheaded on Tower-hill, 1746.
Love, Rev. Christopher, beheaded August 22, 1658, aged 33.
Love, James, English actor and dramatic writer, died 1774.
Love, Mr. John, of Weymouth, died Oct. 1793, aged 41; he weighed 364 pounds.
Lowth, Robert, bishop of London, learned writer, died 1787.
Lucan, born at Corduba, in Spain, Nov. 11, 37; condemned and bled to death in a bath, April 30, 64.
Lucas, Rev. Dr. Richard, born 1648, died blind 1715.
Lucas, Dr. Charles, of Dublin, died Nov. 5, 1771.
Lucius, the first Christian king of Britain, reigned 77 years; founded the first church in London at St. Peter's, Cornhill, which was made the see of an archbishop, till removed to Canterbury, 179.
Lucretius, born at Rome 95, put an end to his life in a raging fit, 52 before Christ.
Ludlow, Edmund, the republican writer, died 1693.
Luke, St. died about 70, aged 80.

Luther, Martin, began the Reformation 1518, died 1546.
Luttrel, colonel Henry, shot by an assassin in his chair, in the streets of Dublin, Oct. 22, 1717.
Lycurgus, the Spartan lawgiver, born 926, established his laws 884, died in Crete 872, before Christ.
Lydgate, John, the historian, lived in 1440.
Lydiat, Thomas, English divine and philosopher, died 1646.
Lyons, Israel, jun. the mathematician, of Cambridge, died May 1, 1775, aged 32.
Lysimachus died 281 before Christ, aged 80.
Lytelton, Thomas, died 1481, aged 79.
Lytelton, lord, born 1700, married 1742, created a peer 1756, died August 25, 1773.
Lytelton, bishop of Carlisle, the antiquary, died 1768.
Macauley Graham, Mrs. the historian, died June 23, 1791.
Macfindley, Esq. of Tipperary, died June, 1773, aged 143.
Machiavel died 1530.
Mackenzie, George, born 1636, died 1691.
Maclaurin, Collin, the mathematician, died 1746.
Macmahone, lord, hanged for high treason, Nov. 1, 1644.
Macquire, lord, hangedat Tyburn Feb. 20, 1645.
Maddox, Isaac, English controversy writer, died 1759.
Magellan, Ferdinando, the navigator, died 1520.
Magliabechi, the librarian, died 1714, aged 81.
Mahomet, born at Mecca, May 5, 570; began his errors 612; the sect commenced 622; died June 18, 631.
Maintenon, Madame de, died regretted 1719, aged 84.
Maire, James le, Dutch navigator, died 1622.
Maitland, William, the historian, died 1757.
Mattaire, Michael, eminent writer, died 1747.
Malachi flourished 397 before Christ.
Malcomb, Sarah, executed in Fleet-street, March 7, 1733.
Malebranche, born at Paris, 1638, died 1715.
Malherbe, Francis, French writer, born 1555, died 1628.
Mallet, David, dramatic author, died 1765.
Malmesbury, William of, wrote 1140.
Manasseh chosen high-priest 235 before Christ.
Mandeville, Bernard, of Holland, died 1733, aged 65.
Mandeville, sir John, the traveller, died 1372.
Manlius, M. thrown from the Tarpein rock 484 before Christ.
Manning, Cromwell's spy, executed abroad, 1655.
Mansfield, earl of, died March 15, 1793.
Mariana, Juan, historian of Spain, died 1624, aged 87.
Marise, William, a nobleman's son, hanged, drawn, and quartered, for piracy, 1241.
Mark, St. died in 68.
Markland, Jeremiah, born August, 1662, died July 7, 1776.
Marlborough, J. duke of, died June 16, 1722, aged 72.

Marlborough, Sarah, duchess of, died October 18, 1774.
Marloe, Christopher, killed by his rival, 1593.
Marmion, Sharkerley, English dramatic writer, died 1639.
Marshal, Thomas, English divine and writer, died 1685.
Marston, John, dramatic author, died about 1614.
Martin, St. died about 402.
Martin, Thomas, English antiquary, died 1771.
Martin, Benjamin, English mathematician, died 1782.
Martyn, John, the botanist, died 1768.
Marvel, Andrew, the patriot, born 1620, died 1678.
Mary de Medicis, queen-mother of France, visited England 1638.
Mary, mother of Christ, died in 45, aged 60.
Mary, queen of Scots, fled to England, May 16, 1568, (vide Sovereigns,) beheaded Feb. 8, 1589, aged 44.
Maskelyne, Neville, English astronomer, died 1772.
Maskelyne, Dr. astronomer royal, Feb. 9, 1811, aged 79.
Maso, of Florence, inventor of engraving, died 1450.
Massinger, Philip, dramatic writer, died 1640, aged 55.
Matthew, St. died in 65.
Matthew, of Westminster, English historian, died 1379.
Matthews, Admiral, discarded the naval service, Oct. 22, 1774.
Matthias was high-priest 6 years before Christ.
Maty, Henry, critical author, died 1787.
Maurice, of Nassau, prince of Orange, died 1625.
Mauritius, alias O'Fiheley, archbishop of Tuam, died 1513.
Maximilian, the emperor, enlisted as a captain and subject, under Henry VIII. when he invaded France, 1513.
May, Thomas, dramatic poet, died 1652.
Mayer, Tobias, the astronomer, died 1762.
Mayne, Rev. Dr. Jasper, born 1604.
Mazarine, cardinal, died 1661, aged 59.
Mead, Dr. Richard, born 1673, died 1754.
Melville, sir James, Scotch historian, died 1620.
Merlin, the prophet, lived in 477.
Merrick, the learned James, died 1769.
Mervin, lord Audley, convicted of sodomy, and a rape on his wife, hanged May 13, 1631.
Metastasio, the Italian poet, died 1782, aged 84.
Methuselah died 1656 of the world, aged 969.
Metius, James, of Antwerp, inventor of telescopes, died 1612.
Meton, inventor of the Metonic circle, 430 before Christ.
Micah, the prophet, flourished 754 before Christ.
Middleton, sir Hugh, who brought the New River water to London, died 1589.
Middleton, Dr. Conyers, born 1683, died 1750.
Mildmay, sir Walter, founder of Emanuel college, Cambridge died 1640.
Mill, Rev. Dr. John, born about 1645, died 1701.

Mill, Henry, learned in hydraulics, died 1770.
Miller, Rev. James, born 1703, died 1743.
Milles, Jeremiah, English divine and antiquary, died 1784.
Milton, John, born 1608, died blind 1674.
Minos, the lawgiver, reigned at Crete 1432 before Christ.
Mirabeau, the French statesman, died 1791.
Mist, the printer, imprisoned June 1721.
Mitchell, Joseph, born 1684, died 1738.
Molineux, William, astronomer, born 1656, died 1698.
Moll, Herman, English geographer, died 1732.
Monk, general, arbitrator of England's fate, 1659; made duke of Albemarle, July 13, 1660; died January 4, 1669-70.
Monmouth, Jeffery of, wrote in 1152.
Monmouth, duke of, beheaded 1685, aged 35.
Monro, Dr. John, died Dec. 27, 1791, aged 77.
Montague, lady Mary Wortley, elegant writer, died 1762.
Montesquieu, Charles Secondat. baron, born 1689, died 1775.
Montfaucon died 1741, aged 86.
Montrose, marquis of, executed at Edinburgh, 1570, aged 37.
Moore, Philip, English divine, translator of the Bible, &c. into the Manx language, died 1783.
Moore, James, English dramatic writer, died 1734.
Morant, Philip, English historian, died 1770.
More, sir Thomas, beheaded July 6, 1535, aged 55.
Morell, Dr. Thomas, the learned divine, died 1784, aged 83.
Moreri, born in France 1643, died 1680.
Morley, lord, tried at Westminster-hall for murder 1666.
Mores, Edward Rowe, English antiquary, died 1778.
Mortimer, Roger, earl of March, hanged Nov. 29, 1330.
Mortimer, John, English writer on husbandry, died 1736.
Morton, bishop of Durham, born 1564, died 1659.
Moses born 1571; sent the ten plagues of Egypt 1492; received the tables of stone on mount Sinai, May 4, 1491; died 1451 before Christ.
Moss, Rev. Dr. Robert, born about 1667, died 1729.
Movat, Mr. a surgeon at Dumfries, in Scotland, died February 21, 1776, aged 136.
Moulin, Charles du, French writer, born 1500, died 1566.
Mount, Mr. John, of Langholme, Dumfries, Scotland, died in March, 1776, aged 136.
Mountford, William, born 1659, murdered 1692, aged 32.
Mountain, Mr. the mathematician, died May 5, 1779.
Mountzer, Thomas, founder of the Anabaptists, put to death 1525.
Murray, earl of, regent of Scotland, killed Jan. 23, 1570.
Musgrove, Dr. Wm. English physician and antiquary, died 1721.
Nahum, the prophet, flourished 758 before Christ.
Napier, John. inventor of logarithms, died 1622, aged 67.
Napoleon Buonaparte, born Aug. 15, 1769, died at St. Helena, May 5, 1821.

Nash, Richard, Esq. of Bath, died Feb. 12, 1761.
Naylor, the Quaker, whipped, &c. Dec. 4, 1656.
Nebuchadnezzar, king of Assyria, 606 before Christ.
Nehemiah, the prophet, flourished 450 before Christ.
Nelson, Robert, born 1656, died 1715.
Nelson, lord, born Sept. 29, 1758; killed in the victory over the fleets of France and Spain, off Cape Trafalgar, Oct. 21, 1805, aged 47; buried at the public expence in St. Paul's, Jan. 9, 1806.
Nero, murdered his mother 55, died 68, aged 32.
Nesbit, Dr. English physician, died 1761.
Newhoff, Theodore, king of Corsica, died in London, 1757.
Newman, Thomas, of Brislington, near Bristol, died 1542, aged 152.
Newton, sir Isaac, born Dec. 25, 1642; knighted by queen Anne 1705; died March 20, 1726-27.
Newton, Dr. Thomas, bishop of Bristol, eminent writer, died 1782.
Nicholson, William, archbishop of Cashel, antiquary, died 1727.
Nicomedes, the mathematician, inventor of the geometrical curve, called conchoides, flourished 220.
Nicot, J. introducer of tobacco into France, died 1600.
Noah directed to build the ark 1536 of the world, 120 before the flood; died 1998 before Christ, aged 950.
Nollet, Abbé, learned philosopher, died 1770.
Nonius, Spanish physician and mathematician, inventor of the angles of 45 degrees in every meridian, died 1577.
Norden, Fred. eminent designer and engraver, died 1742.
Norfolk, duke of, beheaded on Tower-hill, May 8, 1572.
Norman, John, the first lord mayor of London, that went by water to Westminster to be sworn, 1453.
Norris, Rev. John, born 1657, died after 1710.
Norris, sir John, English admiral, died 1749.
Northumberland, Dudley, duke of, beheaded for attempting to put Lady Jane Grey on the English throne, 1553.
Northumberland, earl of, beheaded at York, 1571.
Nugent, Thomas, L. L. D. died May 27, 1772.
Norwood, Richard, measured a degree in England 1632, which was the first accurate measure.
Obadiah prophesied 587 before Christ.
Oceleve, Thomas, poet, successor to Chaucer, flourished 1420.
Odell, Thomas, dramatic writer, died 1749.
O'Connor, Roderick, last Irish monarch, died 1198, very old.
Oecolampidius, the reformer, died 1531, aged 49.
Oedipus, king of Thebes, 1266 before Christ.
Ogden, Samuel, divine and writer, died 1778.
Ogilvy, John, the geographer, born 1600, died 1676.
Ogle, John, English poet, the modern Chaucer, died 1746.
Ogle, sir Chaloner, brave English admiral, died 1750.

O'Hara, Kene, Irish dramatic writer, died 1784.
Oldcastle, sir John, hanged and burnt without Temple-bar, 1418. the first Protestant martyr.
Oldfield, Mrs. Anne, celebrated actress, died 1730.
Oldmixon, John, born in the reign of George I.
Oldys, William, antiquary and writer, died 1761.
Orange, William I. prince of, assassinated June 30, 1584.
Orlando, Furioso, died 1772.
Orleans, duke of, assassinated at Paris, Nov. 23, 1407, by order of the duke of Burgundy.
Orleans, duke of, regent of France, died Nov. 22, 1723.
Orleans, the infamous duke of, (or Egalité) guillotined Nov. 5, 1793.
Ormond, duke of, impeached June 21, 1715; retired to France August following; 10,000*l.* reward offered by Ireland for taking him, Jan. 1718-19; 5000*l.* offered by the English, March 1718-19; died in France, and was brought to England, and buried at Westminster, May 22, 1749.
Orpheus, the poet, flourished 576 before Christ.
Orsato, Sertorio, the antiquary, poet, and historian, was born 1617, died 1678.
Orsato, John Baptist, the physician, born 1674, died 1720.
Osborn and his wife murdered at Tring, Hertfordshire, for supposed witchcraft, April 22, 1715.
Ossian flourished as a poet in 300.
Ostervald, John Frederick, the divine, born 1663, died 1747.
Otho, emperor of Germany, visited England 1207.
Ottoman, first emperor of the Turks, 1323.
Otway, Thomas, English poet, born 1651, died 1685.
Oughtred, Rev. William, born 1573, died 1660.
Overbury, sir Thomas, poisoned in the Tower, Sept. 17, 1613, aged 32.
Ovid, born at Sulmo 43 before Christ, died 15 after Christ.
Owen, Rev. Dr. John, died 1683, aged 66.
Ozanum, James, an eminent mathematician, born 1640, died 1717.
Ozell, John, master of the languages, died Oct. 1743.
Paece, Richard, dean of St. Paul's, died in 1552, aged 50.
Pagi, Anthony, the critic, born 1624, died 1694.
Palladio, the architect, flourished in 1576.
Par, Robert, died at Kinver, Salop, Sep. 21, 1757, aged 124.
Par, Thomas, who lived in ten reigns, died 1635, aged 152.
Pantaloon, Sa. the Spanish ambassador's brother, executed for murder, July 6, 1654.
Paris, Matthew, the historian, died 1259.
Parkinson, John, the botanist, died 1690.
Parnell, Thomas, English divine and poet, died 1718.
Parry, Dr. executed for a plot against Elizabeth, 1585.
Parsons, Robert, the Jusuit, born 1554, died 1610.

Partridge, John, the astrologer, born 1644, died 1715.
Pascal, Blaise, born at Auvergne 1623, died 1662.
Patrick, St. first bishop in Ireland, died 491, aged 192.
Patrick, Simon, first bishop of Ely, eminent writer, died 1707.
Patten, Margaret, died near Paisley, in Scotland, in 1737, aged 136 years.
Paul, St. converted 33; caught into the third heaven 44; visited Athens and Corinth 50; died June 29, 67.
Pearce, D. Zechariah, bishop of Rochester, died 1774, aged 84.
Peck, Francis, English antiquary, died 1743.
Peckham, John, archbishop of Canterbury, the first writer on perspective, 1279.
Pelham, Henry, English statesman, died 1754, aged 60.
Pell, Rev. Dr. John, born 1611, died 1685.
Pemberton, Dr. Henry, physician and philosopher, died 1771.
Penn, sir William, brave English admiral, died 1670.
Penn, William, settler of Pennsylvania, born 1644, died 1718.
Penny, Mr. of Clement's Inn, murdered by his servant, May 18, 1741.
Perceval, the Rt. Hon. Spencer, shot by Bellingham, May 11, 1812.
Percy, Henry, earl of Northumberland, last male heir of that family, died 1669.
Pericles, Athenian general, died 429 before Christ, aged 70.
Perrault, Charles, French writer, died 1668.
Perreau, Robert and Daniel, were executed for forgery, Jan. 17, 1775.
Perrot, Mr. a bankrupt, hanged for embezzling his effects, Oct. 6, 1761.
Persius, Flaccus, born Dec. 4. 42, died aged 28.
Pertinax, died 93, aged 66.
Peter, St. baptized Cornelius, and established a bishop at Antioch, 37; established the see of Rome 41; died 76.
Peter I. of Russia, visited England 1697; disinherited his eldest son Feb. 1716-17; condemned him to death June 26, 1717; took the title of Emperor Oct. 1721.
Peter II. married his prime minister's daughter Nov. 30, 1729; died of the small-pox Jan. 19, 1730.
Peter III. deposed and murdered, July 16, 1762.
Petrarch, Francis, born at Arezzo 1304, died 1374.
Phædrus, born 47 before Christ, died 31 after.
Phalaris, the tyrant of Crete, 561 before Christ.
Pharamond, first French monarch, died 428.
Pharaoh ordered all the male children of the Hebrews to be destroyed 1573; drowned with his army, Monday, May 11, 1461. before Christ.
Phidias, the statuary, lived 486 before Christ.
Philetus, of Cos, grammarian, flourished 280 before Christ.
Philip, king of Macedon, murdered by Pausanius, 336.

Philip of Castile, driven by a storm to England 1505.
Philips, Ambrose, dramatic poet, died 1748.
Philips, Catherine, the celebrated Orinda, died 1644.
Philips, John, English poet, died 1708, aged 32.
Philpot, John, an alderman of London, stabbed Wat Tyler in Smithfield, 1381.
Picart, John, the mathematician and astronomer, died 1693.
Picus, prince of Mirandola, memorable for his extraordiuary genius and memory in languages, died 1494.
Pilate made governor of Judea 27, slew himself 40.
Pindar, the poet, died 435 before Christ, aged 80.
Piozzi, Hester, Mrs. formerly Mrs. Thrale, the friend of Dr. Johnson, and eminent for literature, died May 2, 1821, aged 82.
Pitcairne, Dr. Archibald, born 1652, died 1703.
Pitt, Thomas, governor of Madras, possessor of the great diamond, father of the earl of Chatham, died 1726.
Pitt, William, earl of Chatham, died May 11, 1778, aged 70, and buried at the public expence in Westminster abbey, June 9th following.
Pitt, right honourable William, (son of the preceding) eminent orator and statesman, born May 8, 1759; died Jan. 23, 1806, in his 47th year.
Pitt, Rev. Christian, Engiish poet, born 1699, died 1748.
Pizarro, admiral Francis, died 1541, aged 63.
Platina, the historian, died 1481, aged 60.
Plato, died 384 before Christ, aged 80.
Playfair, Professor James, died 1819.
Playford, John, English musician and composer, died 1693.
Pliny, the elder, died 79, aged 56.
Pliny, the younger, lived in 99.
Plot, Dr. Robert, antiquary and historical writer, died 1696.
Plunket, Oliver, titular archbishop of Dublin, hanged at Tyburn, with Edward Fitzharris, July 1, 1681.
Plutarch died 119, aged 69.
Pocock, Rev. Dr. Edward, born 1604, died 1661.
Pocock, Dr. Richard, bishop of Meath, the traveller, died 1765.
Poggius, the reviver of Greek and Latin literature, died 1459.
Pole, cardinal, died Nov. 18, 1558, aged 58.
Polignac, cardinal, French writer, died 1741.
Pollio, a Roman orator and poet, who occasioned the first library being opened at Rome for public use, died in 42.
Polybius, born at Megelopolis 205 before Christ.
Pomfret, Rev. Mr. the poet, died young 1709.
Pompadour, the marchioness, died 1765.
Pompey killed in Egypt 48 before Christ, aged 59.
Pomponius, Mela, the geographer, died in 40.
Poole, Matt. English divine and writer, died 1669.

Pope, sir Thomas, founder of Trinity college, Oxford, born 1508, died 1588.
Pope, Alexander, died 1744, aged 55.
Popple, William, English dramatic writer, died 1764.
Porteus, captain, attending an execution at Edinburgh, apprehending a rescue, ordered the soldiers to fire, April 14, 1736; accused of murder, and convicted, but respited by queen Caroline, June 22, 1736; put to death by the mob at Edinburgh, Sept. 7, 1736.
Porteus, Beilby, bishop of London, died 1809.
Portuguese ambassador's brother beheaded for murder 1654.
Postel, William, French writer, born 1505, died 1581.
Postlethwaite, Malachy, English writer, died 1767.
Potter, archbishop, died 1747, aged 73.
Powell, George, English actor and dramatic writer, died 1714.
Pretender, the old, born June, 10, 1688, died 1776.
Pretender, the young, his son, born Nov. 30, 1720, died Jan. 31, 1788, without male issue. His natural daughter, who assumed the title of duchess of Albany, was born in 1763, and died 1789. His brother, the cardinal, was born March 6, 1725, now dead.
Pritchard, Mrs. celebrated actress, died 1769.
Prideaux, Humphrey, historian and critic, born 1648, died 1724.
Prior, Matthew, died Sept. 18, 1721, aged 56.
Provinzale, eminent in mosaic, born 1535, died 1579.
Prynne, William, born 1600; tried by the star chamber, 1633; stood in the pillory, May 1634; again 1637; took his seat in the long parliament, Nov. 28, 1640; died Oct. 24, 1669.
Psalmanazer, George, the pretended Japanese, died 1763.
Ptolemy, Philo, flourished 284 before Christ.
Puffendorf died 1694, aged 63.
Pulteney, William, struck out of the list of privy-counsellors July 1, 1731, died earl of Bath 1764.
Purcell, Henry, the celebrated musician, died 1695.
Pyrrhus began to reign at Epirus 295; lost 20,000 men in battle with the Romans to their 5000; killed by a woman throwing a tile at him, 272 before Christ.
Pythagoras died 497 before Christ, aged 71.
Quarles, Francis, English poet and writer, died 1644.
Quin, James, the comedian, died 1766, aged 73.
Quincy, Dr. John, eminent English physician, died 1723.
Quincy, le marquis, French engineer and military author, died 1720.
Quintilian, died about 94.
Quirini, cardinal, the learned traveller, died 1755.
Quevedo, the Spanish poet died 1647.
Rabutin, count de Bussy, born 1622, died 1693.
Raikes, Robert, Mr. the first projector of Sunday Schools, died at Gloucester 1811, aged 76.

Raleigh, sir Walter, beheaded Oct. 29, 1618, aged 65.
Ralph, James, English historian and poet, died 1762.
Ramsay, Alan, Scotch poet, died 1758.
Ramus, Peter, French writer, born 1515, died 1573.
Randolph, Thomas, English historian, born 1534, died 1605.
Rapin, Rene, died 1687, aged 72.
Rapin de Thoyras, English historian, died May 16, 1725, aged 64 years.
Radcliffe, Dr. John, died and left 40,000*l.* to the university of Oxford, Nov. 1, 1714. His statue erected Dec. 21, 1723. Library began May 12, 1737.
Ray, Rev. John, the naturalist, born, 1628 died 1705.
Rawlinson, Dr. Richard, antiquary, died 1755.
Raynal, abbé, the historian, died March 1796, aged 84.
Read, an alderman of London, sent as a common soldier, for refusing the king an arbitrary benevolence, 1544.
Reaumur, M. de, the French philosopher, born 1683, died 1757.
Record, Robert, first English writer on algebra, about 1557.
Regiomontanus, John Muller, astronomer, poisoned at Rome, 1476.
Regnier, Mathur, French writer, born 1573, died 1613.
Rhees, the last king of South Wales, killed 1094.
Ricant, sir Paul, English writer and critic, born 1600.
Ricci, Lawrence, the last general of the society of Jesuits, born Aug. 2, 1703; made general of the order, May 21, 1758; imprisoned at Rome, Sept. 22, 1773; died Nov. 24, 1776, aged 72.
Richardson, Samuel, moral writer, died 1761, aged 72.
Richelieu, cardinal, died 1642, aged 57.
Ridley, bishop of London, burnt at Oxford, Oct. 16, 1555.
Rizzio, David, an Italian musician, killed March 9, 1566.
Robert, duke of Normandy, died in prison 1107.
Robertson, of Hopetoun-hall, near Edinburgh, died 1793, aged 137 years.
Robin Hood, died 1247.
Robins, Benj. English mathematician and engineer, died 1751.
Rochefoucault, duke of, died 1680, aged 68.
Rochester, William, earl of, died 1680, aged 32.
Rodney, admiral lord, died May 24, 1792.
Roger de Hovedon, the historian, flourished 1192.
Rogers, captain Woods, English navigator, died 1732.
Rollin, Charles, died 1741, aged 80.
Rollo, first duke of Normandy, conquered that country from the crown of France 876.
Rook, admiral sir George, died 1708, aged 47.
Rosamond born 1162; shut up at Woodstock 1177.
Roscius flourished 60 before Christ.
Roscommon, earl of, English poet, died 1684.
Roubilliac, the sculptor, died Jan. 11, 1762.
Rousseau, John James, French poet, died July 2. 1778 aged 72.

Rowe, Nicholas, made poet laureat August 11, 1715; died Dec. 6, 1718, aged 44.
Rowe, Elizabeth, died Feb. 20, 1737, aged 63.
Rowley, William, contemporary with Shakespear.
Rowley, eminent English mathematician, died 1728.
Ruffhead, Owen, eminent English lawyer, died 1769.
Rumford, Count, the philosopher, died at Paris, 1814.
Rupert, prince, died Nov. 29, 1681, aged 62.
Russell, lord William, beheaded July 21, 1683
Russell, admiral, died 1627, aged 75.
Rust, archbishop of Dromore, died 1670.
Rutherford, Dr. Thomas, died 1771, aged 66.
Ruyter, Dutch admiral died 1676, aged 69.
Ryan, Lacy, eminent actor and dramatic writer, died 1760.
Rymer, Thomas, English antiquary and historian, died 1713.
Rysbrac, Jull, the sculptor, died 1770, aged 78.
Sacheverel, Rev. Dr. silenced March 23, 1710, died 1724.
Sadleer, sir Ralph, eminent English statesman, died 1587.
Sale, George, translator of the Alcoran, died 1736.
Salisbury, Sally, died in Newgate, Feb, 25, 1724.
Salmon, Nathaniel, divine and historian, died 1740.
Salmon, William, English miscellany writer, died 1685.
Sancho, Ignatius, the African, died 1780.
Sandcroft, archbishop of Canterbury, born 1616; committed to the Tower, tried and acquitted 1688; deprived 1689; died Nov. 26, 1693, aged 77.
Sanderson, Robert, English antiquary, died 1741.
Sandys, George, the traveller, died 1643.
Sanquir, lord, hanged for killing a fencing-master 1612.
Sentry, lord, condemned for murder in Ireland, April 27, 1739.
Sarpi, father Paul, born 1552, died 1623.
Savage, Richard, born 1698; condemned for murder 1727; pardoned 1728; died 1743.
Saville, sir Henry, born 1540, died 1622.
Saunderson, Dr. N. the mathematician, died 1739, aged 57.
Saxe, count, died, 1750, aged 54.
Scævola, Mutius, burnt his right hand before Porsenna, for killing the secretary, when he intended to have slain Porsenna himself, 509 before Christ.
Scales, lord, murdered by a ferry-man, August 19, 1460.
Scaliger, Julius Cæsar, died 1558, aged 75.
Scarborough, sir Charles, English anatomist, died 1702.
Schomberg, Dr. Isaac, English physician, died 1761.
Schomberg, duke of, landed in Ireland, August 13, 1689; killed at the battle of the Boyne, 1690.
Schwarts, Berth. discoverer of gunpowder, died 1340.
Scot, Reginald, eminent English writer, died 1599.
Scotus, John, died 883.

Scotus, Marianus, the historian, flourished 1086
Scrimer, Henry, learned Scotchman, died 561.
Scrimshaw, Mrs. Jane, died in Rosemary-lane workhouse, Tower hill, Dec. 6, 1711, aged 127.
Scudery, George, French writer, born 1603, died 1667.
Scudery, Magdalen de, French writer, died 1701.
Season, Dr. Henry, died 1755.
Seaton, Rev. Thomas, who instituted the prize poems at Cambridge born about 1684, died 1750.
Secker, Dr. Thomas, archbishop of Canterbury, died 1768.
Sedley, sir Charles, born about 1636, died about 1720.
Segar, sir William, English heraldric writer, died 1633.
Seldon, John, born 1584, died October 30, 1654.
Semiramis, queen of Assyria, died 1665 before Christ.
Seneca, born at Corduba in 1, died 64.
Servetus, burnt at Geneva, Oct. 27, 1553.
Servigne, marchioness de, born 1626, died 1696.
Sewel, Dr. George, eminent physician, died Feb. 8, 1727.
Seymour, lord, made lord high admiral 1547; married the widow of Henry VIII. March, 1548, who died in childbed, September following; he was beheaded on Tower-hill, March 20, 1549.
Shadwell, Thomas, born 1640, died Nov. 20, 1692.
Shaftsbury, earl of, born 1671, died 1713.
Shakespear, William, born 1564, died April 3, 1616.
Sharp, archbishop of St. Andrew's, born 1618, shot in his coach May 3, 1679.
Sharp, archbishop of York, died 1714.
Shaw, Dr. Thomas, English traveller, died 1751.
Shaw, Cuthbert, English poet, died 1771.
Shebbeare, Dr. pilloried at Charing-cross, Dec. 5, 1758; died August 1788, aged 79.
Sheldon, archbishop, died Nov. 9, 1677.
Shenstone, Wm. English poet and miscellany writer, died 1763.
Shepery, John, the poet, died 1342, aged 33.
Sherard, William, founder of the botanic professor at Oxford, died 1728.
Sherburn, sir Edward, born 1618, killed in a mutiny at Oxford, June 12, 1646.
Sheridan, Dr. Thomas, born 1685, died 1738.
Sheridan, Thomas, English actor and writer, died 1788.
Shirley, James, born 1594, died 1666.
Sherlock, Dr. Thomas, bishop of London, died 1761.
Shore, Jane, mistress of Edward IV. did penance 1483; her husband executed for coining, 1496.
Short Dr. Thomas, English physician, died 1685.
Short, James, eminent optician, died 1768.
Shovel, sir Cloudsley, lost on the rocks of Scilly, Oct. 22, 1707, aged 56.

Shuter, Edward, the comedian, died Nov. 17, 1776.
Sidney, Sir Philip, born 1514; killed in battle, Sept. 22, 1586.
Sidney, Algernon, beheaded Dec. 7, 1683.
Sigismund, the emperor, visited England, 1419, died 1438.
Simnel, Lambert, crowned king in Ireland 1487.
Simon Magus, the first heretic, came to Rome 41.
Simpson, Thomas, English mathematician, died 1761.
Sisygambis, mother of Darius, on hearing of the death of Alexander, starved herself, 324 before Christ.
Sisypus, first king of Corinth, 1504 before Christ.
Sixtus V. pope 1585.
Skelton, Rev. John, the poet, died 1589.
Skinner, Stephen, English physician an antiquary, died 1667.
Slingsby, sir Henry, governor of Hull, and Dr. Hewit, beheaded on Tower-hill, June 8, 1658.
Sloane, sir Hans, born 1660, died Jan. 11, 1752-3.
Smallbridge, Dr. bishop of Bristol, poet and writer, died 1719.
Smart, Rev. Christopher, died 1771.
Smellie, Dr. William, eminent anatomist, died 1763.
Smith, sir Thomas, historian, born 1514, died 1577.
Smith, Edmund, the poet, died 1710, aged 41.
Smith, Dr. Robert, of Cambridge, died 1768, aged 82.
Smith, Rev. Dr. Thomas, biographer, born 1638, died 1710.
Smollet, Dr. Tobias, the historian, died Sept. 17, 1771.
Snell, Hannah, the female soldier, had a pension settled on her June, 1730.
Snelling, Thomas, writer on coins, died 1773.
Sobeiski, John, king of Poland, died 1696.
Socrates put to death 401 before Christ, aged 70.
Solander, Dr. naturalist, died May 13, 1782.
Solon, the lawgiver, born 549 before Christ, died aged 80.
Somerville, William, English poet, died 1743.
South, Rev. Dr. Robert, born 1633, died 1716.
Speed, John, the historian, died July, 1629, aged 76.
Spelman, sir Henry, the antiquary, died 1641, aged 80.
Spencer, John, dean of Ely, died 1693, aged 62.
Spencers, father, son, and grandson; the father was hanged at Bristol, aged 90, in October, 1329; the son was hanged at Hereford, November 24 following; the grandson was beheaded at Bristol, 1400.
Spencer, the poet, born 1510, died 1598.
Spinckes, Rev. Nathaniel, born 1653, died 1727.
Spooner, Mr. at Tamworth, Warwickshire, died aged 57, who weighed 40 stone 9 pound, and measured 4 feet 3 inches across the shoulders, April 30, 1775.
Spotswood, archbishop of St. Andrew's, born 1565, died 1639.
Sprat, Dr. Thomas, bishop of Rochester, historian, died 1713.
Stackhouse, Thomas, English divine and historian, died 1752.

Stansilaus, the abdicated king of Sweden, burnt by accident, Feb. 6, 1766, aged 89.
Stanley, Thomas, the philosophic historian, died 1678.
Stanley, George, of Homington, near Salisbury, died 1719, aged 151 years.
Stapleton, Walter, bishop of Exeter, murdered in London in an insurrection of the people, 1326.
Stapleton, sir Robert, dramatic writer, died 1669.
Steele, sir Richard, died Sept. 1, 1729, aged 53.
Stephen, the martyr, died Sept. 26, aged 35.
Sterne, Rev. Lawrence, celebrated writer, died 1768.
Sternhold, Thomas, the poet, died 1541.
Stephens, George Alexander, dramatic poet, died 1787.
Stephens, captain John, lexicographer, died 1726.
Stillingfleet, bishop of Worcester,died 1699.
Stilpo, the philosopher, died about 294 before Christ.
Stow, John, the historian, died April 5, 1605, aged 80.
Strabo flourished 30 before Christ.
Strafford, lord, beheaded May 12, 1642.
Straight, John, English divine and poet, died 1740.
Strunsee and Brandt, Danish counts, beheaded at Copenhagen, April 28, 1772.
Stripe, John, born 1643, died Dec. 1737.
Stuart, Dr. Gilbert, the historian, died Aug. 13, 1786.
Stukely, Dr. the antiquary, died 1765.
Sucklin, sir John, dramatic writer, born 1613, died 1642.
Sudbury, archbishop of Canterbury, beheaded by the rebels on Tower-hill, June 14, 1381.
Suetonius, the historian, flourished 110, died 118.
Suidas, the learned lexicographer, lived in 1087.
Sully, duke de, died 1648, aged 82.
Sutton, Thomas, founder of the Charter-house, born 1532, died 1611.
Swift, dean of St. Patrick's, Dublin, died Oct. 1745, aged 78.
Swiney, Mac Owen, dramatic author, died 1754.
Sydenham, Dr. Thomas, died Dec. 29, 1689, aged 65.
Synge, archbishop of Tuam, born 1659, died July 14, 1741.
Tacitus lived in the year 97.
Talland, marshal, taken prisoner by the English, 1704, died 1728.
Tamerlane, conqueror of Asia, born 1336, died 1405.
Tanner, Thomas, bishop of St. Asaph, antiquary, died 1735.
Tate, Nahum, poet laureat, died 1716.
Taverner, William, dramatic writer, died 1731.
Taverner, John Bapt. famous French traveller, died 1689.
Taylor, John, the water-poet, died 1654, aged 74.
Taylor, bishop of Down, died Aug. 13, 1667.
Tell, William, shot Grisler, the Austrian governor, 1317.
Temple, sir William, died Jan. 1669, aged 69.

Templeman, Dr. Peter, English physician, died 1769.
Tenison, Dr. Thomas, archbishop of Canterbury, died 1715.
Terencoe died 159, aged 64.
Terpander, the musician, lived about 706 before Christ.
Thales, the philosopher, born 640, died 572, before Christ.
Themistocles, the Athenian general, died 449 before Christ.
Theobald, Lewis, English dramatic writer, died 1742.
Theodore, king of Corsica, abdicated his kingdom, 1737; died in an obscure lodging in Soho, London, 1757.
Thepis, the poet, flourished about 539 before Christ.
Thevenot, Melchisedec, the French traveller, died 1692.
Thomson, James, died August 27, 1748, aged 46.
Thorp murdered by the mob 1640.
Thorpe, John, antiquary, died August 2, 1792, aged 78.
Thynne, Thomas, shot at Pall-Mall, Feb. 12, 1682.
Tickle, Thomas, English poet, died 1740.
Tice, Mr. died at Hagley, Worcestershire, February 26, 1774, aged 125.
Tillotson, archbishop of Canterbury, died 1694, aged 63.
Timoleon, of Syracuse, died 337 before Christ.
Tindale, Dr. Matthew, born 1657, died 1733.
Tindale, William, hanged at Auxburgh, 1536.
Tindale, Rev. Mr. Nicholas, died June 26, 1774.
Tofts, Mary, the rabbit woman, imposed upon the public, 1768.
Toland, John, born 1670, died 1722.
Tompion, Thomas, eminent English watch-maker, died 1669.
Tooke, Ant. English divine and writer, died 1731.
Torquatis, M. caused his own son to be put to death for having fought contrary to his orders, 340 before Christ.
Tournefort, Joseph, botanist, died 1708.
Trap, Rev. Dr. Joseph, born 1679, died Nov. 1747.
Trump, Van, the Dutch admiral, killed July 29, 1653.
Tull, Jethro, eminent in husbandry, died 1741.
Turner, Dr. William, the first English botanist, about 1550
Tycho, Brahé, of Denmark, born 1546, died 1601.
Tyler, Wat, the rebel, killed 1381.
Tyson, Dr. Edward, eminent physician, died 1708.
Upton, James, English grammarian, died 1749.
Usher, James, archbishop of Armagh, learned writer, born 1581, died 1656.
Valentine, the first professed polytheist, lived in 110.
Vanburgh, sir John, died March 26, 1726.
Vanani, burnt at Thoulouse, Feb. 19, 1619, aged 33.
Vasco di Gama, a Portuguese, discoverer of the East Indies, 1524.
Vauban, Seb. mareschal, engineer, died 1707, aged 74.
Vernon, admiral, died 1757, aged 73.
Verstegen, Richard, the English antiquary, died after 1625.

Viner, Richard, English divine and author, died 1757.
Virgil, born at Andes, near Mantua, in 63; died at Brundusium, in Italy, 18 before Christ.
Virgil, Polydore, died 1553, aged 80.
Virginius slew his daughter, that she might not fall a sacrifice to the lust of Appius Claudius, 446 before Christ.
Voltaire, M. de, died 1778, aged 85.
Wager, admiral, died 1643, aged 77.
Wagstaffe, the Rev. Mr. Thomas, born 1645, died 1712.
Wakeley, William, of Shiffnall, died 1714, aged 124.
Walker, the Rev. Mr. defended Londonderry, 1689; slain at the battle of the Boyne, 1690.
Wallace, sir William, eminent Scotch general, died 1304.
Waller, Edmund, English poet, died 1687, aged 81.
Walpole, sir Robert, earl of Orford, born 1674; committed to the Tower 1712; took his seat in the house of peers Feb. 11, 1741-2; died 1745.
Walton, Brian, bishop of Chester, editor of the Polyglot Bible, died 1661.
Walworth, lord mayor of London, knocked down Wat Tyler with the city mace 1381.
Warbeck, Perkin, executed Nov. 1499.
Warburton, Dr. bishop of Gloucester, died June 11, 1779.
Ware, sir James, eminent Irish historian, died 1666.
Warren, sir Peter, English admiral, died 1752.
Warwick, earl of, the king-maker, defeated at the battle of Barnet April 14, 1471, and slain.
Washington, George, first president of the United States of America, died Dec. 15, 1799.
Waterland, Daniel, English divine and writer, died 1740.
Watson, bishop of Landaff, died July 4, 1816.
Watson, John, English divine and historian, died 1783.
Watts, Dr. Isaac, born 1673, died 1748.
Wedgewood, Josias, the celebrated porter, died January 3, 1795.
Wenner, the mineralogist, died 1817.
West, James, the antiquary, died July 2, 1772.
Wesley, Rev. John, died March 28, 1791, aged 88.
Wharton, Philip, duke of, declared a traitor April 3, 1729, died May 31, 1731.
Wharton, Henry, English divine and historian, died 1694.
Whiston, William, the astronomer, born 1667, died 1752.
Whitby, Rev. Dan, born 1638, died 1726.
Whitehead, William, poet laureat, died April 17, 1785.
Whitfield, Rev. George, preached in the fields, 1735; excluded the church May 10, 1739; died 1770, aged 56.
Whittington, sir Richard, lord mayor of London 1377.
Whytt, Dr. Robert, English physician and writer, died 1766.

Wickliffe opposed the pope's supremacy 1377; died 1385; and 40 years after his bones burnt for being an heretic.
Wilkins, David, English librarian at Lambeth, died 1740.
William, prince, son of Henry I. lost on his passage from Normandy 1120.
William of Malmesbury, English historian, flourished 1140.
Williams, sir Charles Hanbury, historian and poet, died 1759.
Willis, Doctor Thomas, eminent English physician, &c. died 1675.
Willis, Dr. Browne, died Feb. 1760.
Willoughby, Francis, English natural historian, died 1672.
Wilson, Samuel, of London, bequeathed 20,000*l.* to be lent out in small sums to industrious tradesmen, 1771.
Winchelsea, Ann Kingsmill, countess of, poetess, died 1720.
Winkleman, abbé, murdered at Trieste, 1768.
Wit, John de, murdered at the Hague, August 10, 1662.
Wolcot, Dr. John, known by the name of Peter Pindar, died 1819, aged 82.
Wolfe, general, killed before Quebec, September 13, 1759, aged 33.
Wollaston, Rev. William, born 1652, died 1724.
Wolsey, minister to Henry VIII. 1513; archbishop of York 1514; cardinal 1515; chancellor Dec. 24th following; legate 1518; resigned the seals Oct. 18, 1529; stripped of all his possessions, and died Nov. 18, 1530, aged 59.
Woodcock, Elizabeth, survived a confinement of 8 days and 9 nights under the snow, near Cambridge, viz. from Saturday evening, Feb. 9 to Monday morning, Feb. 18, 1799.
Woodward, Dr. John, born1665, died 1708.
Woodward, Henry, English comedian, died 1777.
Woolsey, sir William, drowned in his coach, July 4, 1728.
Worde, Winkin de, the printer, died 1534.
Wotten, Rev. Dr. William, died 1726, aged 60.
Wray, Daniel, English antiquary, died 1783.
Wren, sir Christopher, died 1725, aged 91.
Wyat, sir Thomas, the poet, died 1541, aged 37.
Wykeham, William of, eminent English prelate, bishop of Winchester, died 1404.
Xenophon died at Corinth 359 years before Christ, aged 90.
Ximenes, cardinal de, died 1517, aged 80.
Yalden, Thomas, English divine and poet, died 1736.
Yates, Mrs. Mary, of Shiffnall, died August 1776, aged 128.
Young, Dr. Edward, died 1765, aged 81.
Zephaniah, the prophet, flourished 641 before Christ.
Zinzendorff, count Nicholas Lewis, founder of the Moravians, died June 9, 1760, aged 70.

THE LAW OF ENGLAND.

THE municipal law of England, or the rule of civil conduct prescribed to the inhabitants of this kingdom, may with sufficient propriety be divided into two kinds: the *lex non scripta*, the unwritten or common law; and the *lex scripta*, the written or statute law.

Common Law.—The *lex non scripta*, or unwritten law, includes not only general customs, or the common law properly so called; but also the particular customs of certain parts of the kingdom, and likewise those particular laws that are by custom observed only in certain courts and jurisdictions. In calling these parts of the law *leges non scriptæ*, we would not be understood, as if all those laws were at present merely oral, or communicated from the former ages to the present solely by word of mouth. It is true, indeed, that in the extreme ignorance of letters, which formerly overspread the western world, all laws were entirely traditional; for this plain reason, that the nations among which they prevailed had but little idea of writing. Thus the British, as well as the Gallic druids, committed all their laws as well as learning to memory; and it is said of the primitive Saxons here, as well as their brethren on the continent, that *leges sola memoria et usu retinebant*. But with us, at present, the monument and the evidences of our legal customs are contained in the records of the several courts of justice, in books of reports and judicial decisions, and in the treatises of learned sages of the profession, preserved and handed down to us from the times of the highest antiquity.—However, we therefore style these parts of our law *leges non scriptæ*, because their original institution and authority are not set down in writing, as acts of parliament are; but they receive their binding power, and force of laws, by long and immemorial usage, and by their universal reception throughout the kingdom.

Our antiquarians and first historians do all positively assure us, that our body of laws is of a compounded nature. For they tell us, that in the time of Alfred the local customs of the several provinces of the kingdom were grown so various, that he found it expedient to complete his dome-book, for the general use of the whole kingdom. This book is said to have been extant so late as the reign of Edward IV. but it is now unfortunately lost.

But the irruption and establishment of the Danes in England, which followed soon after, introduced new customs, and caused this code of Alfred in many provinces to fall into disuse, or at least to be mixed and debased with other laws of a coarse alloy. So that, about the beginning of the 11th century, there were three principal systems of laws prevailing in different districts.

The Written Laws.—The oldest of these now extant, and printed in our statute books, is the famous *magna charta*, as confirmed in parliament 9th Henry III. though doubtless there were many acts before that time, the records of which are now lost, and the determinations of them perhaps at present currently received for the maxims of the old common law.

These are the several grounds of the laws of England: over and above which, *equity* is frequently called in to assist, to moderate, and to explain them. *What equity is*, and how impossible in its very essence it is to be reduced to stated rules, may easily be conceived. It may be sufficient, therefore, to add, in this place, that besides the liberality of sentiment with which our common-law judges interpret acts of parliament, and such rules of the unwritten law as are not of a positive kind, there are also *courts of equity* established for the benefit of the subject, to detect latent frauds and concealments, which the process of the courts of law is not adapted to reach; to enforce the execution of such matters of trust and confidence, as are binding in conscience, though not cognizable in a court of law; to deliver them from such dangers as are owing to misfortune or oversight; and give a more specific relief, and more adapted to the circumstances of the case, than can always be obtained by the generality of the rules of the positive or common law. This is the business of the courts of equity, which however are only conversant in matters of property. For the freedom of our constitution will not permit, that in criminal cases a power should be lodged in any judge to construe the law otherwise than according to the letter. This caution, while it admirably protects the public liberty, can never bear hard upon individuals. A man cannot suffer *more* punishment than the law assigns, but he may suffer *less*. The laws cannot be strained by partiality to inflict a penalty beyond what the letter will warrant; but in cases where the letter induces any apparent hardship, the crown has the power to pardon.

Act of Parliament is a positive law, consisting of two parts; the *words* of the act, and its *true sense* and meaning; which being joined, make the law. The *words* of acts of parliament should be taken in a *lawful* sense. Cases of the same nature are *within the intention*, though *without the letter* of the act; and some acts extend, by equity, to things not mentioned therein.

JUDGE; an officer appointed by the sovereign powers of any country, to distribute that justice to their subjects which they cannot administer in person. The character of judge is a part of the regal authority, whereof the king divests himself. The chief function of judges is for the trial of causes both civil and criminal.

The judges are bound by oath, to determine according to the known laws and customs of the realm. Their rule herein must be, the judicial decisions and resolutions upon the various causes

that have occurred, and not their own arbitrary will and pleasure, or that of their prince. Judges are free from all prosecutions, for any thing done by them in court, which appears to have been an error in judgment. But for wilful corruption, they have been complained of to the star-chamber, and may now be called to an account in parliament.

The English judges are chosen out of the sergeants at law, and are constituted by letters patent.

The salary of chief justice of the king's bench is 4000*l.* a year; the chief justice of the common pleas 3500*l.*; the chief baron of the exchequer 3500*l.*; and the *puisne*, or under judges, 2000*l.* a year each.

SERGEANT, or Sergeant at Law, is the *highest degree* taken in the common law, as that of doctor is in the civil law. Sergeants were anciently called *servientes ad legem.* Mr. Selden adds, they were also called *doctores legis*; though others are of opinion, that the judges are more properly the *doctores legis*, (doctors of the law,) and sergeants, the bachelors of the law. Spelman observes, that however a sergeant may be richer than all the doctors of the commons, yet a doctor is superior in degree to a sergeant; for the very name of a doctor is magisterial, and that of a sergeant ministerial. Hence, the doctors are seated and covered when they plead; but the sergeants stand uncovered at the bar, excepting for their coif.

As these are supposed the most learned and experienced, there is one court appropriated to plead in by themselves, which is the common pleas, where the common law of England is most strictly observed. But they are not prohibited pleading in other courts, where the judges (who must first be sergeants) call them brothers.

They are called by the king's mandate or writ, directed to them, commanding them to take upon them that degree. Of *counsellors* there are two degrees, *barristers* and *sergeants.* Barristers, after having been admitted *five* years in any of the inns of court, such as Lincoln's Inn, the Temple, &c. are called to the bar; and after *sixteen* years' standing, they may be called to the degree of sergeants.

Out of these the king's counsel is usually selected, to plead for him in all causes, especially treason; the two principal of whom are called his attorney and solicitor general, who are always members of parliament. The king's counsel cannot be employed in any cause against the crown, without special licence. They are heard before other counsel, and even before sergeants.

CORONER; an officer, whereof there are two in every county, whose business is to inquire, by a jury of twelve neighbours, how and by whom any person came by a violent death; and to enter the same upon record.

This, being matter criminal, and a plea of the crown, it is hence they are called crowners, or coroners. They are chosen by the freeholders of the county, by virtue of a writ out of chancery.

This officer, by the statute of Westminster, ought to be a knight; and there is a writ in the register called *nisi sit miles*, whereby it appears to have been once a sufficient cause for removal of a coroner chosen, if he were not a knight, and had not 100 shillings per annum freehold. Mention is made of this officer, as early as the time of king Athelstan, anno 925.

The lord chief justice of the king's bench is the sovereign coroner of the whole realm, or wheresoever he abides.

There are also certain special coroners within divers liberties, as well as the ordinary officers in every county: and some colleges and corporations are impowered by their charters, to appoint their coroner within their own precincts.

Coroners are chosen for life, unless they become sheriffs, or verderors, or are discharged by a writ, for extortion, neglect, or misbehaviour. A part of their judicial authority is, to inquire of lands or goods, and escapes of murderers, treasure-trove, wreck of the sea, deodans, &c. and in his ministerial power, he executes the king's writs, on exception to the sheriff.

JUSTICE; an officer appointed by the king or commonwealth, to do right by way of judgment.

He is called justice, not judge; anciently *justicia*, not *justiciarius*, because he has his authority by deputation, as delegate to the king; so that he cannot depute any other in his stead, the justice of the forest only excepted. Of these justices we have various kinds in England, viz.

Chief justice of the king's bench, is the capital justice of Great Britain, and a lord by his office.—His business is chiefly to hear and determine all pleas of the crown; that is, such as concern offences against the crown, dignity, and peace of the king, as treasons, felonies, &c.

This officer was formerly not only chief justice, but also chief baron of the exchequer, and master of the court of wards. He usually sat in the king's palace, and there executed his office. He determined, in that place, all the differences happening between the barons and other great men.

He had the prerogative of being vicegerent of the kingdom, whenever the king went beyond sea, and was usually chosen to that office out of the prime nobility; but his power was reduced by king Richard I. His office is now divided, and his title changed.

Chief justice of the common pleas; he who, with his assistants hears and determines all causes at the common law; that is to say, all civil causes between common persons, as well personal as real; and he also is lord by his office.

Justice of the forest, is a lord by his office, who has power and authority to determine offences committed in the king's forests, &c. which are not to be determined by any other court, or justice. Of these there are two, whereof one has jurisdiction over all the forests on this side the Trent, and the other beyond it.

By many ancient records, it appears to be a place of great honour and authority, and is never bestowed but on some person of great distinction. The court where this justice sits, is called the *justice-seat of the forest.*

Justices in eyre, were those anciently sent with commission into divers counties to hear such causes especially as were termed pleas of the crown; and that for the ease of the subject, who must else have been hurried to the courts of Westminster, if the cause were too high for the county courts.

According to some, these justices were sent once in seven years, but others will have them to be sent oftener. Camden says, they were instituted in the reign of Henry II. but they appear to be of an older date.

They were much like our justices of assize at this day; though for authority, and manner of proceeding, very different.

Justices of assize, are such as were wont, by special commission, to be sent into this or that county, to take assizes, for the ease of the subjects. For whereas these actions pass always by jury, so many men might not, without great damage and charge, be brought up to London; and therefore justices, for this purpose, by commission particularly authorized, were sent down to them.

These continue twice every year to pass the circuit, by two and two, through all England, despatching their several businesse by several commissions; for they have one commission to take assizes, another to deliver gaols, and another of oyer and terminer, &c.

Justices of gaol delivery; those commissioned to hear and determine causes appertaining to such as for any offence are cast into prison. Their commission is now turned over to the justices of assize.

Justices of nisi prius, are now the same with justices of assize: It is a common adjournment of a cause in the common pleas to put it off to such a day, *nisi prius justiciarii venerint ad eas partes ad capiendas assisas:* from which clause of adjournment, they are called justices of *nisi prius,* as well as justices of assize, by reason of the writ, and actions they have to deal in.

Justices of oyer and terminer, were justices deputed on some special occasions to hear and determine particular causes.

The commission of oyer and terminer is directed to certain persons, upon any insurrection, heinous demeanour, or trespass committed.

Justices of the peace, are persons of interest and credit, ap-

pointed by the king's commission to attend the peace of the country where they live.

Of these, some, for special respect, are made of the *quorum*, so as no business of importance may be despatched without the presence or assent of them, or one of them.

The office of a justice of the peace, is to call before him, examine, and commit to prison, all thieves, murderers, wandering rogues(those that hold conspiracies, riots, and almost all delinquents which may occasion the breach of the peace, and quiet of the subject; to commit to prison such as could not find bail, and to see them brought forth in due time to trial.

The origin of justices of the peace, is referred to the fourth year of Edward III. They were first called *conservators* or *wardens of the peace*.

INNS OF COURT.—Our colleges of municipal or common law professors, and students, are still called inns; the old English word for houses of noblemen, bishops, and others of extraordinary note; being of the same signification with the French word *hotel*.

Inns of court are so called, as some think, because the students there are to serve and attend the courts of judicature, or else because anciently these colleges received none but the sons of noblemen, and better sort of gentlemen, who were to be qualified to serve the king in his court, as Fortescue affirms.

Of these we have four, viz. the two temples, heretofore the dwelling of the knights-templars, purchased by some professors of the common law, about 300 years ago; and Lincoln's-Inn and Gray's-Inn, anciently belonging to the earls of Lincoln and Gray.

These societies are not corporations, nor have any judicial power over their members, but have certain orders among themselves, which have, by consent, the force of laws; for lighter offences, persons are only excommoned, or put out of commons; for greater, they lose their chambers, and are expelled the college; and when once expelled out of one society, are never received by any of the others.

The whole company of gentlemen in each society, may be divided into four parts; benchers, outer-barristers, inner-barristers, and students.

Inns of chancery, were probably so called because anciently inhabited by such clerks as chiefly studied the forming of writs, which regularly belonged to the cursitors, who are officers of chancery.

The first of these is Thavies'-Inn, begun in the reign of Edward III. and since purchased by the society of Lincoln's-Inn; then New-Inn, Symmond's-Inn, Clement's-Inn; Clifford's-Inn, anciently the house of lord Clifford; Staple-Inn, belonging to

the merchants of the staple; Lion's-Inn, anciently a common inn with the sign of the lion; Furnival's-Inn, and Bernard's-Inn.

These were heretofore preparatory colleges for young students; and many were entered here, before they were admitted into the inns of court. Now they are mostly taken up by attornies, solicitors, &c.

They all belong to some of the inns of court, who send yearly some of their barristers to read there.

JUROR; in a legal sense, one of those twenty-four, or twelve men, who are sworn to deliver truth upon such evidence as shall be given them touching any matter in question.

The punishment of petty jurors attainted of giving a verdict contrary to evidence, is very severe.

JURY; in common-law, signifies twenty-four, or twelve men, sworn to inquire of a matter of fact, and declare the truth, upon such evidence as shall be delivered them touching the matter in question.

The jury is to be chosen out of the same class or rank with the accused; and if he be a foreigner, he may demand a jury half foreigners and half Englishmen.

There are ordinarily thirty-six impannelled, whereof, in criminal cases, the person accused has the liberty to challenge or set aside twenty-four, and to pick out twelve at his pleasure. These twelve are present at the trial; after which they withdraw into a chamber by themselves, where they are to be shut up without fire or candle, victuals or drink, till such time as they agree in their verdict, and declare unanimously, that the defendant is either guilty of the charge laid against him, or not guilty: Upon which the judge passes the sentence prescribed by the law.

In England there are two sorts of trials, viz. one by parliament, another by assize, or jury.

The trial by assize (be the action civil or criminal, public or private, personal or real,) is referred for the fact to a jury; and as they find it, so passes the judgment.

This jury is not only used in circuits of justices errant, but also in other courts and matters of office: But though it appertain to most courts of the common law, yet it is most remarkable in the half-year courts of the justices errant, commonly called the great assizes, and in the quarter sessions; and in them it is most ordinarily called a jury: In other courts it is usually called an *inquest*, and in the court baron, a *jury of the homage*.

In the general assize, there are usually many juries, because there are a great many causes, both civil and criminal, commonly to be tried; whereof one is called the grand jury, and the rest the petit juries, of which, it seems, there should be one in every hundred.

Grand jury consists of twenty-four grave and substantial gentlemen, or some of the better sort of yeomen, chosen indifferently by the sheriff out of the whole shire, to consider of all bills of indictment preferred to the court; which they do either approve, by writing upon them *billa vera;* or disallow, by indorsing *ignoramus.*

Such as they do approve, if they touch life and death, are farther referred to another jury, to be considered of, because the case is of much importance.

Petit jury consists of twelve men at the least, and are impannelled as well upon criminal as upon civil causes. Those that pass upon offences of life and death, bring in their verdict either guilty or not guilty; whereupon the prisoner, if he be found guilty, is said to be convicted, and receives judgment and condemnation; or otherwise is acquitted and set free.

Those that pass upon civil causes real, are all, or so many as can conveniently be had, of the same hundred where the land or tenement in question doth lie, being four at least; and they, upon due examination, bring in their verdict either for the demandant, or tenant.

This is the distinguishing privilege of every Briton, and one of the most glorious advantages of our constitution; for, as every one is tried by his peers, or equals, the meanest subject is as safe and free as the greatest.

CIVIL CAUSES.—This term implies all infringement upon *property,* in contradistinction to *criminal causes,* which are considered as breaches of the peace. Criminal causes are begun by the persons aggrieved, but they are carried on in the *king's name,* who is considered as the chief magistrate, and enforcer of the laws.

OATH, in a *legal sense,* is a solemn action, whereby God is called to witness the truth of an affirmation given before one or more persons impowered to receive the same.

Legal oaths end with, So help me God; anciently with, So help me God at his holy dome, i. e. judgment. This, according to our law-books, is called a corporal oath; because the party, when he swears, touches the Gospels with his right hand.

In small matters, which the plaintiff could not prove, or if he ould, if his proof were set aside, the defendant might purge imself by his own oath. But in matters of more weight, he was to bring other credible persons, usually of the same quality with the plaintiff, to swear that they believe the defendant had swore the truth.

Oath is also used for a solemn promise faithfully to execute or observe something.

Trials at common law depend on twelve or twenty-four men,

who take their oaths to declare the truth, as it shall appear to them. In this sense we say, state oaths, supremacy, oath of allegiance, oath of abjuration.

At the meeting of a new parliament, the commons take the oaths of allegiance, supremacy, and abjuration.

Kings and princes swear to the performance of the treaties they make: though anciently, they did not swear of themselves; but others swore in their name.

By *oath of allegiance*, a man swears fidelity and loyalty to his king, and by the *oath of supremacy*, he abjures the *pope*, and acknowledges the king to be the head of the church.

ASSISE, or *Assizes*; in law, a sitting of judges, or justices, for the hearing and determining of causes. The word is French, *assise*, or *assis*, seated; formed of the Latin *assideo*, I sit by; which is compounded of *ad*, to, and *sedeo*, I sit.

Assise, or *assises*, was anciently used for certain extraordinary sittings of superior judges, in the inferior courts depending on their jurisdiction; to inquire whether subaltern judges and officers did their duty; to receive the complaints preferred against them; and take cognizance of appeals from them. These are also called mercurial assises.

Assise was also a court or assembly, composed of several great persons of the realm; held occasionally in the king's palace, for the final decision of all affairs of importance.

Hence, the term assize came to be extended to all grand days of judgment, at which the trials and pleadings were to be solemn and extraordinary.

The modern constitution of assises is something different from that hitherto spoken of. Our assise may be defined a court, place, or time, where and when writs and processes, either civil or criminal, or both, are considered, despatched, decided, &c. by judges and jury. In this sense, we have two kinds of assises, *general* and *special*.

General assise, or *assises*, are those held by the judges twice a year, in their several circuits.

The nature of these assises is explained by lord Bacon, who observes, that all the counties of the kingdom are divided into six circuits; through each of which, two learned men, assigned by the king's commission, ride twice a year, (except in Middlesex, and the four northern counties, where the assises are taken only once a year,) called justices, or judges of assise, who have several commissions, by which they sit, viz.

First—*A commission of oyer and terminer*, directed to them, and many others of the best account in their respective circuits. In this commission, the judges of assise are of the quorum; so that without them there can be no proceeding. This commission

gives them power to deal with treasons, murders, felonies, and other misdemeanors.

The second is of *gaol delivery*, which is only to judges themselves, and the clerk of the assise associate. By this commission they have to do with every prisoner in the gaol, for what offence soever.

The third is directed to themselves, and the clerk of the assise, to take writs of possession, called also assises, and to do right and justice thereupon.

The fourth is to take nisi prius, directed to the justices, and the clerks of assises; whence they are also called justices of nisi prius.

The fifth is a commission of peace, in every county of their circuit; and all the justices of the peace, having no lawful impediment, are bound to be present at the assises, to attend the judges.

The sheriff of every shire is also to attend in person, or by sufficient deputy allowed by the judges, who may fine him if he fail.

This excellent constitution of judges, circuits, and assises, was begun in the time of Henry II. though somewhat different from what it is now.

FELO DE-SE, is he that commits fellony, by willingly and deliberately killing himself.

The Saxons called him self-bane. The law says, he is to be interred without Christian burial, with a stake driven through his corpse; and to forfeit his goods.

FELONY, was anciently used for a violent and injurious action of a vassal, or tenant, against his lord.

In which sense, felony was equivalent to petty-treason, or it was a crime next below high-treason.

Felony was also applied to an injury of the lord to his vassal, which imported a forfeiture of the homage and service thereof, and made it revert to the sovereign.

Felony is also used in common law, for any capital offence perpetrated with an evil intention.

In a stricter sense, felony denotes an offence next below that of petty-treason.

Felony includes several species of crimes, whose punishment is the same, viz. death; such as murder, theft, suicide, sodomy, rape, wilful burning of houses, receiving of stolen goods; and divers others found in the statutes, which are daily making crimes felony, that were not so before.

Felony is easily distinguished from treason.

From lesser crimes, it is distinguished by this, that its punishment is death, though not universally; for petty larceny, i. e.

stealing a thing under the value of twelve pence, is felony, according to Brook, though the crime be not capital, but only loss of goods. The reason Brook gives for its being felony is, that the indictment runs, *Felonice cepit.*

Till the reign of Henry I. felonies were punished by pecuniary fines; that prince first ordered felons to be hanged, about the year 1108.

Felony is of two kinds; the one lighter, which for the first time is entitled to the benefit of clergy; as manslaughter. The other more crying, is not allowed the privilege.

Felony is also punished by loss of lands, not entailed, and all goods and chattels, both real and personal; though the statutes make a difference in some cases concerning lands.

PERJURY, is the crime of swearing falsely, in a lawful oath, administered by one who has authority, in any matter relating to a cause in question, whether it be of a person's own accord, or by subornation of another.

The law takes no notice of any perjury but such as is committed in some court of justice, or before some magistrate invested with proper authority. The perjury must be corrupt, wilful, positive, and absolute; not upon surprise or the like, but it must appear to be committed *malo animo*, with a bad intent; and it must be in some point material to the question in dispute.

Subornation of perjury is the offence of procuring another to take a false oath, as constitutes perjury in the principal. The punishment of perjury and subornation, at common law, has been various. It was anciently death; afterwards banishment or cutting out the tongue; then forfeiture of goods; and now it is fine and imprisonment, and never more to be capable of bearing testimony.

LARCENY, is a theft of personal goods or chattels in the owner's absence. Larceny is distinguished into two sorts, *great* and *small.*

Great Larceny, is when the things stolen, though severally, exceed the value of 12*s.*

Petty Larceny, is when the goods stolen exceed not the value of 12*d.*

When it is done by force it is called robbery. Plain theft, unaccompanied with any other atrocious circumstance, is also deemed *simple larceny*, and when it includes in it the aggravation of taking from one's house or person, it is called *mixed* or *compound larceny.*

By the Roman law the penalty of secret and simple larceny was returning it two-fold; and of manifest larceny, four-fold. The Lacedemonians never punished larceny, provided the person was not caught in the fact; but, on the contrary, it was applauded

as a mark of dexterity and address. The Circassians are said to honour it at this day, so that their youth are not suffered to drink if they have not performed something remarkable in that way. Solinus tells us, if we believe him, that there was a fountain in Sardinia that had the virtue of discovering a person that had committed larceny.

TREASON, imports a betraying treachery, or breach of faith. It therefore happens only between allies. For treason is indeed a general appellation, made use of by the law to denote, not only offences against the king and government, but also that accumulation of guilt which arises when a superior reposes confidence in a subject or inferior, between whom and himself there subsists a natural, a civil, or even a spiritual, relation; and the inferior so abuses that confidence, so forgets the obligations of duty, subjection, and allegiance, as to destroy the life of any such superior. And therefore, for a wife to kill her husband, a servant his master, these breaches of domestic faith are denominated *petit treason*. But when disloyalty so rears its crest, as to attack even majesty itself, it is called, by way of distinction, *high treason*.

High treason is considered as the highest civil crime any man, as a member of the community, can possibly commit. By the ancient common law, there was a great latitude left in the breast of the judges to determine what was treason or not so; but to prevent arbitrary constructions, a statute of Edward III. defines what offences only are high treason. It deems that such, "when a man doth compass or imagine the death of our lord the king, or our lady his queen, or of their eldest son and heir," &c.

The *punishment* of high treason is solemn and terrible. 1st, The offender is to be drawn to the gallows, and not to be carried or walk, though usually (by connivance, at length ripened by humanity into a law,) a sledge or hurdle is allowed, to preserve the offender from the extreme torture of being dragged on the ground or pavement. 2d, That he be hanged by the neck, and then cut down alive. 3d, That his entrails be cut out, and burnt while he is alive. 4th, That his head be cut off. 5th, That his body be divided into four parts, &c.

The king may, and often does, discharge all the punishment except beheading, especially where any of noble blood is attainted. In case of *coining*, which is treason of a different complexion, the punishment is milder for male offenders, being only to be drawn and hanged by the neck till dead. But the punishment for women is to be drawn to the gallows, and there to be burnt alive.

Petit treason may happen three ways; by a servant killing his master; a wife her husband, &c. A servant who kills his master whom he has left, upon a grudge conceived against him during his service, is guilty of petit treason; for the traitorous

intention was hatched while the relation subsisted between them, and this is only an execution of that intention. So if a wife be divorced, and should kill such divorced husband, she is a traitoress. The *punishment* of petit treason in a man, is to be drawn and hanged, and in a woman to be drawn and burnt. The idea of which latter punishment seems to have been handed down to us from the laws of the ancient Druids, which condemned a woman to be burnt for murdering her husband; and it is now the usual punishment for all sorts of treason, committed by the female sex. Persons guilty of petty treason, were first debarred the benefit of clergy, which has been since extended to their aiders, abettors, and counsellors.

JURISPRUDENCE, is the science of what is just and unjust, or of the *laws, rights, customs, statutes,* &c. necessary for their doing justice; it is, in short, the science of the laws.

Civil jurisprudence, is that of the Roman law; canonical, that of the canon law; feudal, and that of fees.

BENEFIT OF CLERGY, is an ancient privilege of the church, which was admitted even in cases of murder: but the ancient course of the law is much altered on this head. By the statutes of Elizabeth, clerks are no more committed to the ordinary to be purged; but every man to whom the benefit of clergy is granted, though not in orders, is put to read at the bar, after he is found guilty and convicted of such felony, and so burnt on the hand, and set free for the time, if the ordinary or deputy, standing by, do say, *legit ut clericus,* otherwise he shall suffer death.

It had its rise in the pious reverence which the first Christian princes paid the church in its infant state; and was intended to exempt the clergy from being criminally proceeded against by lay judges. Popish ecclesiastics soon made an ill use of this, for they afterwards claimed this indulgence, not only for themselves, but for all attendants upon the church, and, at length, all that could read had the same indulgence; *reading* being a mark of great learning in those days.

Henry VIII. made a distinction between laymen and clergymen; the former for crimes deserving death, were to be burned with a hot iron on the left thumb; and the privilege to be a second time refused them: both men and women however obtained the indulgence. Clergymen, when found guilty of such crimes as claim the *benefit of clergy,* are not to be burnt in the hand, but immediately discharged: peers, when found guilty, are also discharged by benefit of clergy, without burning; but for the second offence will, like a layman, suffer death.

BURGLARY, has been always deemed a heinous offence. It may be defined *nocturnal housebreaking.* The law has so tender

a regard for the safety of a man's house, that it styles it his castle, and will never suffer it to be violated with impunity. Sir Edward Coke's definition of a burglar is, "he that by night breaketh and entereth into a mansion-house, with intent to commit a felony." In this definition there are four things; the *time*, the *place*, the *manner*, the *intent*. Burglary is a *felony* at common law, but within the benefit of clergy.

MANSLAUGHTER, is a species of felonious homicide, and denotes the unlawful killing a man, without any malice, either express or implied; which may be voluntary, upon sudden heat; or involuntary, but in the commission of some lawful act. As when two persons, who before meant no harm to one another, falling out upon some sudden occasion, the one kills the other, this is involuntary manslaughter; but in this, and every case of homicide, upon provocation, if there be a sufficient time for passion to subside, and the person provoked afterwards kill the other, this is deliberate revenge, and amounts to murder.

HABEAS CORPUS, in law, a writ, which a man indicted and imprisoned for any crime, or trespass, before the justices of peace, or in a court of franchise, (having offered sufficient bail, which is refused, though the case be bailable,) may have out of the king's bench, thereby to remove himself thither, at his own costs, to answer the cause at the bar thereof.

The order in this case, is first to procure a writ of *certiorari* out of the chancery, directed to the said justices, for removing the indictment into the king's bench, and upon that to procure this writ to the sheriff, for causing his body to be removed at a certain day.

Habeas Corpora is also a writ that lays for bringing in a jury, or so many of them as refuse to come upon the *venire facias*, for the trial of a cause to be brought to issue.

SUMPTUARY LAWS, are laws made to restrain excess in apparel, costly furniture, eating, &c.

Most ages and nations had their sumptuary laws; and some retain them still. But it is observed, that no laws are worse executed than sumptuary laws.

The sumptuary laws of that ancient Locrian legislator, Zaleucus, are famous: by these it was ordained, that no woman should go attended with more than one maid in the street, except she was drunk; that she should not go out of the city in the night, unless she went for base purposes; that she should not wear any gold or embroidered apparel, unless she purposed to be a common woman. That men should not wear rings or tissues, &c.

The English have had their share of sumptuary laws, though all repealed by a statute of 1st Jac. I. or obsolete.

Under King Henry IV. Camden tells us, pride was got so much into the foot, that it was proclaimed, that no man should wear shoes above six inches broad at the toes. And their other garments were so short, that it was enacted, 25th Edward IV. that no person, under the condition of a lord, should, from that time, wear any mantle or gown, unless of such a length.

Among the Romans the sumptuary and cibary laws were very numerous: by the Lex Orchia the number of guests at feasts was limited, though without limitation of the charges thereof. By the Fannian law, made twenty-two years afterwards, it was enacted, that more than ten asses should not be spent at any ordinary feast; for the solemn feasts, as the saturnalia, &c. an hundred asses were allowed; ten of which, Gellius informs us, was the price of a sheep, an hundred of an ox.

By the Didian law, which was preferred eighteen years after, it was decreed, that the former sumptuary laws should be of force, not only in Rome, but throughout Italy; and that for every transgression, not only the master of the feast, but all the guests too, should be liable to the penalty.

TITHES, are defined to be the tenth part of the increase, yearly arising and renewing from the profits of lands, the stock upon lands, and the personal industry of the inhabitants: the first species being usually called *predial*, as of corn, grass, hops, and wood; the second *mixed*, as of wool, milk, pigs, &c. consisting of natural products, but nurtured and preserved in part by the care of man; and of these the tenth must be paid in gross: the third *personal*, as of manual occupations, trades, fisheries, and the like; and of these only the tenth part of the clear gains and profits is due. We shall, in this article, consider, 1st, The origin of the right of tithes. 2d, In whom that right at present subsists. 3d, Who may be discharged, either totally or in part, from paying them.

1. As to their origin, we will not put the title of the clergy to tithes upon any divine right. Yet an honourable and competent maintenance for the ministers of the gospel, is undoubtedly *jure divino*, whatever the particular mode of that maintenance may be. For besides the positive precepts of the New Testament, natural reason will tell us, that an order of men who are separated from the world, and excluded from other lucrative professions for the sake of the rest of mankind, have a right to be furnished with the necessaries, conveniences, and moderate enjoyments of life, at their expence for whose benefit they forego the usual means of providing them. Accordingly all municipal laws have provided a liberal and decent maintenance for their national priests or clergy; ours, in particular, have established this of tithes, probably in imitation of the Jewish law: and perhaps, considering the degenerate state of the world in general, it may be more benefi-

cial to the English clergy to found their title on the law of the land, than upon any divine right whatsoever, unacknowledged and unsupported by temporal sanctions.

We cannot precisely ascertain the time when tithes were first introduced into this country. Perhaps they were contemporary with the planting of Christianity among the Saxons by Augustin the monk, about the end of the sixth century. But the first mention of them which we have met with in any written English law, is a constitutional decree, made in a synod, held A. D. 786, wherein the payment of tithes in general is strongly enjoined. This canon or decree, which at first bound not the laity, was effectually confirmed by two kingdoms of the heptarchy, in their parliamentary conventions of estates, respectively consisting of the kings of Mercia and Northumberland, the bishops, dukes, senators, and people; *which was a few years later than the time that Charlemagne established the payment of them in France,* and made that famous division of them into four parts; one to maintain the edifice of the church, the second to support the poor, the third the bishop, and the fourth the parochial clergy. The next authentic mention of them is in the *Fœdus Edwardi et Guthruni;* or the laws agreed upon between king *Guthrun* the Dane, and Alfred and his son Edward the elder, successive kings of England, about the year 900. This was a kind of treaty between those monarchs, which may be found at large in the Anglo-Saxon laws; wherein it was necessary, as *Guthrun* was a Pagan, to provide for the subsistence of the Christian clergy under his dominion; and accordingly we find the payment of tithes not only enjoined, but a penalty added upon non-observance; which law is seconded by the laws of Athelstan, about the year 930; and this is as much as can certainly be traced out with regard to their legal original.

2. *Upon the first introduction,* though every man was obliged to pay tithes in general, yet he might give them to what priests he pleased, which were called *arbitrary consecrations of tithes;* or he might pay them into the hands of the bishop, who distributed among his diocesan clergy the revenues of the church, which were then in common. But when dioceses were divided into parishes, the tithes of each parish were allotted to its own particular minister; first by common consent, or the appointments of lords of manors, and afterwards by the written law of the land. However, arbitrary consecrations of tithes took place again afterwards, and became in general use till the time of king John; which was probably owing to the intrigues of the regular clergy, or monks of the Benedictine and other rules, under the archbishop Dunstan and his successors; who endeavoured to wean the people from paying their dues to the secular or parochial clergy, a much more valuable set of men than themselves, and were then in hopes to have drawn, by sanctimonious pretences to extraordinary purity of life, all ecclesiastical profits to the coffers of their own societies:

and this will naturally enough account for the number and riches of the monasteries and religious houses which were founded in those days, and which were frequently endowed with tithes. For a layman, who was obliged to pay his tithes somewhere, may think it good policy to erect an abbey, and there pay them to his own monks, or grant them to some abbey already erected, since for this donation, which really cost the patron little or nothing, he might, according to the superstition of the times, have masses for ever sung for his soul. But in process of years, the income of the poor laborious parish priests became scandalously reduced by these arbitrary consecrations of tithes. It was remedied by pope Innocent II. about the year 1200, in a decretal epistle sent to the archbishop of Canterbury, and dated from the palace of Lateran; it enjoined the payment of tithes to the parsons of the respective parishes where every man inhabited, agreeable to what was afterwards directed by the same pope in other countries. This epistle, says Sir Edward Coke, bound not the lay subjects of this realm, but being reasonable and just, it was allowed of, and became *lex terræ*. This put an effectual stop to all the arbitrary consecrations of tithes; except some footsteps which still continue in those portions of tithes which the parson of one parish hath, though rarely, a right to claim in another; for it is now universally held, that tithes are due of common right to the parson of the parish, unless there be a special exemption. This parson of the parish may be either the actual incumbent, or else the appropriator of the benefice; appropriations being a method of endowing monasteries, which seems to have been devised by the regular clergy, by way of substitution to arbitrary consecrations of tithes.

Lands and their occupiers may be exempted or discharged from the payment of tithes, either in part or totally, first, by a real composition; or, secondly, by custom or prescription. First, a real composition is when an agreement is made between the owner of the lands, and the parson or vicar, with the consent of the ordinary and the patron, that such lands shall for the future be discharged from the payment of tithes, by reason of some land or other real recompence given to the parson in lieu and satisfaction thereof. This was permitted by law, because it was supposed that the clergy would be no losers by such composition; since the consent of the ordinary, whose duty it is to take care of the church in general, and of the patron, whose interest it is to protect that particular church, were both made necessary to render the composition effectual; and hence have arisen all such compositions as exist at this day, by force of common law. But experience shewing that even this caution was ineffectual, and the possessions of the church being by this and other means every day diminished, the disabling statute, 13th Elizabeth, was made; which prevents, among other spiritual persons, all parsons and vicars from making

any conveyances of the estates of their churches, other than for three lives, or 21 years. So that now, by virtue of this statute, no real composition, made since the 13th of Elizabeth, is good for any longer term than three lives, or 21 years, though made by consent of the patron and ordinary; which has indeed effectually demolished this kind of traffic; such compositions being now rarely heard of, unless by authority of parliament. Secondly, a discharge by custom or prescription, is where time out of mind such persons or such lands have been, either partially or totally, discharged from the payment of tithes. And this immemorial usage is binding upon all parties, as it is in its nature an evidence of universal consent and acquiescence, and with reason supposes a real composition to have been formerly made. This custom or prescription is either *de mondo decimandi*, or *de non decimando*. A *modus decimandi*, commonly called by the simple name of *modus* only, is where there is by custom a particular manner of tithing allowed, different from the general law of taking tithes in kind, which are the actual tenth part of the annual increase. This is sometimes a pecuniary compensation, at two pence an acre for the tithe of land; sometimes it is a compensation in work and labour, as that the person shall have only the twelfth cock of hay, and not the tenth, in consideration of the owners making it for him; sometimes in lieu of a large quantity of crude and imperfect tithe, the parson shall have a less quantity when arrived at greater maturity, as a couple of fowls instead of tithe-eggs, and the like. Any means, in short, whereby the general law of tithing is altered, and a new method introduced, is called a *modus decimandi*, or special manner of tithing.

A prescription *de non decimando* is a claim to be entirely discharge of tithes, and to pay no compensation in lieu of them. Thus the king by his prerogative is discharged from all tithes. So a vicar shall pay no tithes to the rector, nor the rector to the vicar, for *ecclesia decimas non solvit ecclesiæ*. But these personal privileges, not arising from being annexed to land, are personally confined to both the king and the clergy; for their tenant or lessee shall pay tithes though in their own occupation their lands are not generally tithable. And, generally speaking, it is an established rule, that in lay hands, *modus de non decimando non valet*. But spiritual persons or corporations, as monasteries, abbots, bishops, and the like, were always capable of having their lands totally discharged of tithes by various ways; as, 1. By real composition. By the pope's bull of exemption. 3. By unity of possession, as when the rectory of a parish, and lands in the same parish, both belonged to a religious house, those lands were discharged of tithes by this unity of possession. 4. By prescription; having never been liable to tithes, by being always in spiritual hands. 5. By virtue of their order, as the Knights Templars Cistercians, and others, whose lands were privileged by the pope

with a discharge of tithes. Though upon the dissolution of abbeys, by Henry VIII. most of these exemptions from tithes would have fallen with them, and the lands become tithable again, had they not been supported and upheld by the statute 31st Henry VIII. which enacts, that all persons who should come to the possession of the lands of an abbey then dissolved, should hold them free and discharged of tithes, in as large and ample a manner as the abbeys themselves formerly held them. And from this original have sprung all the lands which, being in lay hands, do at present claim to be tithe-free; for if the man can shew his lands to have been such abbey lands, and also immemorially discharged of tithes by any of the means before-mentioned, this is now a good prescription *de non decimando*. But he must shew both these requisites; for abbey-lands, without a special ground of discharge, are not discharged of course; neither will any prescription *de non decimando* avail in total discharge of tithes, unless it relates to such abbey-lands.

PLAINTIFF, in law, he that *sues* or *complains* in an action, whether of *debt*, *trespass*, *deceit*, or the like. *Defendant*, signifies him who is *sued* in an action *personal*, and a tenant him who is sued in an action *real*.

MORTMAIN, is the alienation of lands and tenements to any corporation or fraternity, and their successors, as bishops, parsons, vicars, which could not be done without the king's licence, and that of the lord of the manor: or of the king alone, if it be immediately holden of him.

When popery was the established religion in this country, it was customary for the monks to persuade persons on their deathbeds, to leave at least a part of their property to the convent to which they belonged; they thus became proprietors of very considerable estates. To prevent this evil, many laws have been made from time to time; and no person now can leave, by will, any sum of money to a charitable use, unless it be bequeathed and enrolled in chancery twelve months before the death of the testator.

MORTGAGE, is an obligation, whereby lands or tenements of a debtor are pawned or bound over to the creditor, for money or other effects borrowed; peremptorily to be the creditor's for ever, if the money be not repaid at the time agreed on. He who borrows the money is called the mortgager, and he that lends is the mortgagee. Henry VIII. prohibited excessive usury. Though a mortgage be considered as forfeited, and the estate absolutely vested in a mortgagee, in case of failure of payment, yet the mortgager may in any reasonable time recall and redeem his estate, paying to the mortgagee his principal, interest, and expences

or otherwise, in strictness of law, an estate worth 1000*l.* might be forfeited for non-payment of 100*l.* or a less sum.

FREEHOLD, is land or tenement which a man holds in fee-simple, fee-tail, or for life. Freehold is of two kinds, in *deed* and in *law*. The first the real possession of land or tenement, in fee, fee-tail, or for life; the other is the right a man has to such land or tenement before his entry or seizure. Whatever is part of the freehold goes to the heir; and things fixed thereto may not be taken in distress for rent or in execution, &c. Freehold estates of certain value are required by statutes to qualify jurors and electors. But a person to be qualified for electing knights of the shire in parliament, must have freehold of not less than forty shillings a year.

COPYHOLD, is a tenure for which the tenant has nothing to shew but the copy of the roll made by the steward of the lord's court.

The steward of the court is, among other things, to enrol and keep a register of all such tenants as are admitted to any parcel of land or tenement, belonging to the manor, and the transcript is called the copy of the court-roll, which the tenant keeps as his own evidence.

This tenure is called a base tenure, because the tenant holds, in some sort, at the will of the lord. Fitzherbert says, it was formerly called tenure in villanage; and that copyhold is but a modern name. However, it is not simply at the lord's will, but according to the custom of the manor; so that if the copyholder doth not break that custom, and forfeit his tenure, he seems not to stand at the lord's courtesy. These customs are infinite; varying in one point or other almost in every manor.

Copyholders upon admittance pay a fine to the lord: which fines are in some manors certain, in others not; but yet, if the lord exceeds two years' value, the court of chancery, king's bench, &c. have, in their several jurisdictions, power to reduce the fine.

In many places the copyholds are a kind of inheritance, and termed customary, because the tenant dying, and the hold becoming void, the next of blood, paying the customary fine, as two shillings an acre, or the like, may not be denied his admission. Some copyholders have by custom the wood growing upon their own land; some again hold by the verge in ancient demesne, so that though they hold by copy, they are yet accounted a kind of freeholders: lastly, some others hold by common tenure, called mere copyhold; whose land, upon felony committed, escheats to the lord of the manor.

This is the land which the Saxons called *folkland*, as being held *sine scripto*, in contradiction to *bockland*, or charter land, *terra ex scripto*.

Copyhold land cannot be made at this day; for the foundation of copyhold is, that it hath been demised time out of mind, by copy or court roll. Copyholders are not allowed to vote for knights of the shire.

LEASE, in law, is a letting of lands, tenements, &c. unto another for life, or for a term of years, or at will for a rent reserved.

A lease when written is called an indenture. The party who lets a lease is called the *lessor*, and the party to whom it is let, the *lessee*.

SUBPŒNA; a writ, whereby any person under the degree of peerage, is called to appear in chancery, in cases where the common law hath made no provision.

The name is taken from the words of the writ, which charge the party summoned to appear at the day and place assigned *sub pœna centum librarum*, on the penalty of an hundred pounds.

There is also a *sub pœna ad testificandum*, for summoning of witnesses in other courts, as well as chancery.

O YES, is a corruption of the French *oyez*, hear ye, being a term whereby the criers in our courts demand silence, or attention, before they make proclamation of any thing.

EXECUTOR, person nominated by a testator to take care to see his will and testament executed or performed, and his effects disposed of according to the tenor of the will.

An executor is either universal, as having the charge and disposal of the whole; or only particular, entrusted with some particular branch thereof.

By the old French law, an executor should be seized of all the moveables of the deceased during one year; at the end whereof he is to account for them. To the validity of a testament, it is not necessary there be an executor mentioned therein.

An executor is generally a friend of the deceased, and hence chosen to execute what is there directed. But if the person so appointed refuse to dispose of the effects, and distribute the property, the next of kin will *administer*, that is, apply to the bishop's court, and take out *letters of administration*. This person is called an *administrator*. An *assignee* is a person appointed by another, to do an act, transact some business, or enjoy a particular commodity.

COMMERCIAL AFFAIRS.

A short History of the Trading Companies in Great Britain.

(FROM MAIR.)

AS the work from which this account of trade is taken is not yet in such *general use* as it deserves; and as the knowledge of commerce is in some degree necessary for every person of good education; the following interesting information is extracted.

The trade of Great Britain with foreign nations is carried on partly by companies, and partly by private merchants. The most considerable companies are these nine.

1. The most ancient trading company in Britain is that which goes now by the name of the *Hamburg Company*. They were originally called Merchants of the Staple, and afterwards Merchant Adventurers. They were first incorporated in the reign of king Edward, anno 1296, and obtained leave of John, duke of Brabant, to make Antwerp their staple or mart, where the woollen manufactures at that time flourished. The staple was afterwards removed to Calais, and from that to other places, and in the reign of Queen Elizabeth to Hamburgh, where it still continues. But private merchants are now allowed the privilege of this trade, upon paying a very small sum to the company.

2. The company next incorporated, was that of the *Russian Merchants*, in the reign of queen Mary, who were empowered to trade to all lands, ports, and places, in the dominions of the emperor of Russia. This company is not very considerable at present; the trade to these places being mostly carried on by private merchants, who are allowed that privilege on payment of five pounds sterling.

3. The next company is the *Eastland Company*, formerly called Merchants of Elbing, a town in Polish Prussia, being the port they principally resorted to in the infancy of their trade. They were incorporated the 21st of the reign of queen Elizabeth, and empowered to trade to all places within the Sound, except Narva, the only Russian port at that time in the Baltic. This company, like the former, is now inconsiderable, the trade to Norway and Sweden being laid open to private merchants, by act of parliament.

4. *The Turkey* or *Levant Company*, was also erected in the reign of queen Elizabeth, and their privileges confirmed and enlarged in the reign of king James I. being empowered to trade to the Levant, or eastern part of the Mediterranean, particularly to Smyrna, Aleppo, Constantinople, Cyprus, Grand Cairo, Alexandria, &c. This trade is also now laid open to private merchants, upon paying a small consideration.

5. The *East India Company* comes next, which was incorporated about the 42d of queen Elizabeth, anno 1600, and empowered to trade to all countries to the eastward of the Cape of Good Hope, exclusive of all others. But about the year 1698, application being made to the parliament by private merchants, for laying this trade open, an act passed, empowering every subject of England, upon raising a sum of money for the support of the government, to trade to these parts. Upon which a great many subscribed, and were called the New East India Compauy. But the old company being masters of all the forts on the coast of India, the new company found it their interest to unite with them, and trade with one joint stock; and have been ever since styled the United East India Company. The most considerable forts, factories, and places of trade, wherein this company are concerned, are these following, viz. Mocha, or Moco, Tden, Maculla, Shahare, Dofar, Muscat, in Arabia Felix; Bassora, Ispahan, Gombroon, in Persia; Cambaya, Amedabad, Baroch, Swalley, Surat, upon the south-west coast of the Great Mogul's empire; Bombay, Dabul, Carwar, on the coast of Decan; Tellechery, Calecut, Anjengo, on the coast of Malabar; Fort St. David, Conymere, Fort St. George, on the coast of Coromandel; Masulapatan, Vizzagapatan, Ballasore, Fort William, Hugley, Cassunbazar, Dacca, Malda, in the Bay of Bengal and mouth of the river Ganges; Achin, Bantol, Cattoun, Ippo, Marlborough Fort, Sillebar, in the island of Sumatra; Canton, Amoy, Chusan, in China.

6. The *Royal African Company*, was incorporated 14th Charles II. and empowered to trade from Sallee, in south Barbary, to the Cape of Good Hope, and to erect forts and factories on the western Coast of Africa for that purpose. But this trade was laid open by act of parliament, anno 1697, and every private merchant permitted to trade thither, upon the paying of 10*l.* towards maintaining the forts and garrisons: this company, for securing their commerce, erected several forts and factories on the coast; the most remarkable whereof are these, viz. on the north part of Guinea, James Fort, upon an island in the river Gambia, Sierra de Leone, and Sherbao; and on the south part of Guinea, viz. on the Gold Coast, Dick's Cove, Secunde, Commenda, Cape Coast Castle, Fort Royal, Queen Anne's Point, Charles Fort, Annamabo, Winnebah, Shidoe, and Acra.

7. The *Canary Company* was also incorporated in the reign of king Charles II. anno 1664, and empowered to trade to the Seven Islands, anciently called the Fortunate, and now the Canary Islands. This company still retain their privilege.

8. *Hudson's Bay Company* is of a pretty old standing, and trades to Hudson's Bay, from which the company take their name, and the places about. They make a very advantageous trade, by exporting woollen goods, haberdashery wares, knives, hatchets, and other hardware; and in return they bring back skins, beaver, and furs.

9. The last of all the trading companies, is that of the *South Sea*, established by act of parliament in the 9th of queen Anne, and vested in the sole trade to and from all lands and kingdoms on the east side of America, from the river Oroonoko to the southernmost part of Terra del Fuego, and from thence to the northernmost part of America on the west side.

THE

ARTIST'S ASSISTANT.

PART I.

OF MINIATURE PAINTING.

IT is scarcely necessary for me to remark, that the first and grand essential towards perfection in this art, is a thorough and well-grounded knowledge in the art of drawing, both from the round and from life; and although I did not sit down to write a treatise on drawing, still I beg leave to advise my readers, who wish to arrive at perfection in the pleasing art of Painting in Miniature, carefully to attend to a correctness of drawing, as without that, however brilliantly coloured their pictures may be, still the eye of the experienced artist, or connoisseur, will not be imposed upon by such gaudy trappings, but will instantly condemn it, and thereby cast an indelible stain on the merit of a young artist, whom not want of real genius, but actual negligence, brought into that misfortune; for a well-drawn indifferently coloured picture, will better escape the lash of the critic, than one badly drawn, and ever so highly embellished by colouring.

From the variety of style adopted by different miniature painters, it is very difficult for a young beginner to ascertain which is the best to follow, and although, in any other sort of painting, I would caution him against becoming what is termed a mannerist, by pursuing a particular plan of working; yet, in miniature painting, there is a certain degree of mechanical attention to be paid to the management of the water colours, to preserve them clear and free from muddiness; which is much more difficult to attain than the management of oil-colours. I would, therefore, again recommend my reader to procure a good miniature, if possible, and keep it by him; observing the style of penciling and management of the colour, at the same time letting nature be his guide in the marking of his features, and colouring of his picture, from the person sitting to him.

PAINTING.

In the management of back-grounds the young painter is to observe their two-fold purpose; that of giving the lights their proper value, and, on the other hand, of harmonizing the colours of the face, by artfully engaging the eye with somewhat of similitude in the back-ground to a tinct in the face, which otherwise, in course of working, to express a particular part might appear too prevalent.

The highest degree of perfection we esteem in a miniature painting, is to see a fine effect produced to the naked eye, and, on examining it with a magnifying glass, to discover that there is scarcely any work in it; so certain has the artist been of his touch, that every stroke of his pencil told as much as twenty from an inferior in the art.

I would very particularly recommend it to a person who commences miniature painter, and who has formerly been copying either from large drawings, or from busts, to continue at his leisure hours still drawing large in black and white chalks; as copying correctly from larger drawings gives an extreme facility to the hand when it comes to draw smaller figures.

In the painting of a head on an oval piece of ivory, such as at present is the form of a miniature picture, the chin should be brought as near as possible to the centre of the ivory, unless the person be very tall, in which case it must be rather higher up; and, if very low, the contrary. I shall now conclude with advising the young miniature painter to be modest and attentive; not, by overleaping the bounds prescribed by the former, argue himself into too high an opinion of his abilities, or, for want of a due observance of the latter, prevent the world from perceiving he was ever possessed of any of the requisites necessary to constitute an artist.

OF COLOURS USED IN MINIATURE PAINTING.

In painting the face, the yellows that are used are five, viz. Gall-stone, Terra Sienna, Nottingham Oker, Roman Oker, and Naples Yellow; the latter three of which are opaque colours, the others transparent. The greens are confined to one, which is Sap-green. The blues are Verditer, Prussian, Indigo, Smalt, Ultramarine, and Antwerp. The reds are Carmine, Drop Lake, Chinese Vermillion, and Indian Red. Under the class of reds, may also be put burnt Terra Sienna, its colour inclining much that way, though more to the orange. The only browns, if any be used in the face, are burnt Umber and Terra de Cassel, and they are only to be used in the mixture of dark shadows under the nose, &c.

For draperies, we shall only add to the above colours Lamp-black, King's Yellow, and Flake White.

OF THE NATURE AND QUALITIES OF COLOURS.

Yellows.

We shall first begin with *Gall-stone*, a genuine kind of which is very difficult to be had in London; a spurious kind being manufactured from dried ox-gall, to which colour-men put gum-water, and so impose it on their customers for a colour, which is one of the finest and brightest in the world, and a lasting one; although in face-painting it should be sparingly used: its wonderful brilliancy being apt to drown all the other colours, and make the work it is used in too warm in its tincts: to get it genuine, apply to the slaughtermen, who will examine the gall-bladders of the oxen, in many of which gall-stones (being concrescences formed in the bladder) are found; by this mode only will the artist or amateur attain possession of this unrivalled colour in its pure state.

Terra Sienna, is a bright yellow earth, somewhat of a foul greasy nature: it is used by some miniature painters as a warm yellow, but when burned it is a beautiful colour, partaking of three tincts, yellow, red, and brown.

Nottingham Oker, is a bright yellow earth: it works well, and is much in use amongst the painters in London; but on account of its heavy quality, it must be used with caution: it certainly is a lasting colour, and of much service in the fleshy tincts of the face.

Roman Oker, is a reddish yellow earth of a very great body: some painters have used it with success in miniature painting, as it works, when properly portioned with gum-water, extremely sharp and neat; and, being in itself a warm colour, it communicates the quality to the tincts it is worked in.

Naples Yellow, although mentioned under the head of yellows, is a colour which, though adopted by some artists, is not by any means in general use for miniature painting: it is a pale gritty yellow, very hard to grind and prepare; is of a very sickly hue, and has this very bad quality, that it absorbs all colours that are either worked on it or mixed with it.

Blues.

It is scarcely necessary to inform our readers, that of all blues ever in use, none can in the smallest degree be set in competition with *Ultramarine*, its wonderful brightness and permanency by far excelling them; but the misfortune artists labour under is, that, like every other valuable article imported from foreign countries, it is generally so adulterated, that it is next to an impossiblity to meet with it genuine. The ingredient that is mixed with it is Smalt, finely ground in water, and then dried. But the way to detect the imposition is, to put a small quantity of what you should buy for Ultramarine on a broad case-knife, and hold it

over a candle, keeping the smoke from touching it, when, if adulterated, it will appear in gray spots; but, if pure, it will remain brilliant as before the trial.

Prussian Blue, is a good colour, and for which there is no substitute in miniature painting, on account of its strength of effect and transparency; of it there are several kinds, some very light-coloured, others dark; the former is only a compound of the good kind, and is either whiting or some such thing. The best and purest sort is dark and brittle.

Smalt, is a very fine bright blue, inclining to purple, but so excessively hard, that nothing but an agate flag and muller will sufficiently pulverize it for fine uses.

In some things it may be used when Ultramarine is not to be had: it is a colour that does not work well, nor is it to be depended on as to permanency.

Indigo, is a useful blue, though it must be sparingly used, on account of its extreme depth of colour, nearly approaching to black; the best is called the Rock Indigo. The way to judge of its qualities is to break it; and if good, it will have a copperish hue; but if bad, it will be of a dead blackish cast.

Verditer, is a fine blue, and much used by miniature painters, not only in their sky-grounds, but likewise in the delicate parts of their faces, and in finely expressing the anatomy of ladies' and childrens' necks: it is a beautiful colour, but requires to be very finely ground on a very hard flag. Care should be taken not to put the pencil it is used with much in your mouth, as its qualities are pernicious.

There has lately been brought forward a colour, called *Antwerp Blue:* it certainly is one of the greatest deceptions in the world, being when dry a most beautiful bright blue, but when wet and prepared a very dingy colour, and totally unfit for the face of a miniature. It appears to be a compound of Prussian Blue, Verditer, and some kind of white, as you will perceive, on breaking a lump of it, white specks all through it. It may be used in blue draperies, or back-grounds, but in nothing else.

Sap Green, which is the juice of buckthorn-berries, is a highly useful colour, when judiciously mixed with other colours, producing warm fleshy tincts, which cannot be produced without it. Its extreme thinness and transparency, is greatly in its favour; and it does not change. There are a variety of tincts under the title of Sap Green, some being of a yellowish cast, others darker, and some very dark; the last is best, the berry at that time being at its full growth and perfection.

Reds.

Carmine, is a very fine bright Crimson, inclining to the scarlet, and is rather an opaque colour. From it a variety of fine tincts may be made, but its being such a very high red renders it unfit

to be used in delicate subjects, such as children, or fine women. There are various kinds of it prepared by chemists, but the deep kind is the best, the lighter sort being frequently made so by adulteration. If any crimson colour stands in water, it is this.

Drop Lake, is made from the shearings of scarlet cloth, and is a pleasing crimson colour; its inclining to the purple makes it particularly useful for the carnation tincts in painting delicate subjects. There are many kinds of it, at various prices, some being nearly as bright and high-coloured as Carmine. Lake being of rather a purple crimson, is more transparent than Carmine, and therefore by miniature painters more generally used.

Chinese Vermillion, when good, is a charming bright red, and useful in miniature pictures, though not to be freely used, its opacity rendering it dangerous to mix much with other colours; but by itself, in touching the under-lip, and other parts that require extreme brightness, it is of wonderful service. It is very difficult to find the real kind, the common Vermilion, mixed with Lake and Carmine, being a general substitute; but the spurious and the genuine kinds very materially differ in the working, the former being thick and heavy, the other the contrary. It comes from China, in small parcels of fourteen ounces each, with Chinese characters marked on the cover; but although this is the only mode of coming at the genuine kind, still there are descriptions of people who contrive to baffle artists in that particular, by counterfeiting the characters on the covering of the packets.

Indian Red, is of a deep purple cast, and is a most excellent colour, not only for touching the deep-red parts, but likewise in the fleshy tincts of men's pictures. It is a colour difficult to prepare, being very hard and gritty: but it is to be bought in the capital colour-shops in London ready for use, in an impalpable powder, and works extremely well. It is useful in bright backgrounds, and also in draperies.

Browns.

Umber, is a yellowish brown, very greasy, and mixes unkindly with water-colours, and in a miniature painting useful only for draperies, and even for them can be dispensed with; but when properly burnt, is a charming reddish-brown, very useful in many parts of miniature painting, and works extremely sharp and neat.

Terra de Cassel, or Vandyke Brown, so called from the very great estimation the inimitable painter of that name held it in, is the finest rich brown in the world, in itself producing a more beautiful colour than can be formed by the junction of any colours whatever. It is in general use amongst the oil and water painters in London. It is, in its natural state, rather coarse and sandy, but when prepared it amply repays the artist for his labour in doing so.

Lamp Black, is the smoke of burning rosin, and is useful for marking the pupil of the eye, for mixing in hair colours, and in painting draperies. The smoke of a candle received on a plate, is found the best, being blacker than the common Lamp Black.

King's Yellow, is a fine bright opaque colour, and is admirably calculated for painting lace, gilt buttons, &c. &c. but is a rank poison, therefore should be cautiously used.

Flake White, or refined White Lead, is useful in the cloth draperies of men's pictures, but not to be used by itself as a white, for it will turn black; which circumstance should be nicely attended to by all artists. It is used in miniature painting for linen, &c. It should be immediately covered with a glass, which method is the only one which stands a chance of preserving its purity.

OF THE PREPARATION OF COLOURS.

Amongst the number of necessary colours just mentioned, there are three which require to be burnt, viz. Terra Sienna, Umber, and Lamp Black. The method is as follows:

The colour is to be put into a crucible, which is to be covered and placed in a hot fire, and when you think that the lump of colour is red-hot through, take the crucible off the fire, and let the colour cool. But the Lamp Black is to be prepared in a different manner. You take some of the common kind, put it on a clean fire-shovel, or plate of iron, over the fire: it will immediately, on receiving the heat, begin to smoke; on the ceasing of which your Lamp Black is freed from the oily substance it originally contained, and fit for immediate use.

Gum-water.

Choose the large white pieces of Gum Arabic, which is brittle, and easily comes to pieces in your fingers, also that which is clear; put it into a clean vial, and pour some water upon it which is well strained and divested of all sandy particles. Make your gum-water about the thickness of barley-gruel, that is, so thick that you can feel it in your fingers. Note, the fresher made your gum-water always is, the better.

To grind Colours, and prepare them for the Pallet.

You must provide yourself, if possible, with an agate flag and muller; but if that cannot be conveniently had, glass ones may answer, though not quite so well. The glass muller and flag must be lightly roughened with fine flour emery, which will give it a surface, that will continue a long time. After being particularly careful that your flag, &c. are quite clean, you lay some of the colour to be ground on it, bruising it whilst dry gently with the muller; then put a few drops of water on it, and grind it very carefully, not making it too wet, as that will prevent it from

keeping sufficiently under the muller. When you think it is finely ground in the water, take your pallet-knife, or a thin-edged piece of ivory, scrape your colour together in a little heap on your flag, which let dry for a short time, then add your gum-water to it gradually, having a piece of ivory near you, on which you are frequently to lay some of the colour with the camel-hair pencil thin, and when you perceive the colour in the smallest degree to shine when dry, it is gummed enough; when you are to scrape it off your flag, and transfer it to your pallet.

Note, There are some colours which will not bear a sufficient quantity of gum to make them shine, without injuring their qualities, as Smalt, Ultramarine, and Verditer blues.

Of HAIR PENCILS.

The Manner of choosing them, &c.

Pencils for painting in miniature, are not made of camel's hair, but of the tips of squirrels' tails; and of these there are two kinds, the dark brown, and yellowish red. Pencils made of the latter kind are called sable pencils, and are of a stiffer nature than the others, and bear more than double the price. They certainly are a useful kind of pencil, as long as the fine flue at the end of the hair remains, on account of their elasticity: but the instant the flue is worn off, they from their harshness become useless; however, they may be dispensed with, as no pencil can be superior to one made of the common kind of hair. We here caution our readers against an error, too prevalent amongst young miniature painters, which is, that of preferring a very small pencil for their work, vainly hoping by the assistance of such a one to execute their picture with more neatness and accuracy: but in this, as before observed, they will, not only by their own experience, but by their intercourse with eminent miniature painters, find themselves egregiously mistaken, the finest and most highly-finished pictures being executed with a middle-sized pencil, the point of which being not only sufficiently neat, but from its body containing a quantity of colour in fluid, enables the artist to give that mellow firm touch, which is so generally admired by connoisseurs in the art. The young artist is therefore advised to choose a middle-sized pencil, with a good spring and point, both of which he will know by drawing the pencil lightly through his mouth, and touching it on his thumb-nail; if he finds it on being moderately wet to spring again into its form, after being bent, it is a good sign: but as there are many pencils possessed of that quality, which are deficient in another material one, namely, that of a good point, that must be very cautiously looked to, by turning the pencil round on the nail, in every direction, observing the hairs at the point keep equally together of a length, and none shooting out on either side, (which is often occasioned by the

pencil-maker putting the hair into the quill, with a twist in it;) all these defects being carefully guarded against, you are sure of being in possession of a very principal material for miniature painting.

IVORY.

The Method of choosing, bleaching, and preparing it.

Of ivory there are various kinds, the distinction of which, in this art, is of very material consequence; but I must first inform the reader, that ivory newly cut, and full of sap, is not easily to be judged of, the general transparency it exhibits in this state almost precluding the possibility of discovering whether it be coarse grained or fine, streaky or the contrary, unless to the artist who, by a long course of experience, is familiarized with it. The best way to discover the quality of it is by holding it grainways to the light, then holding it up and looking through it, still turning it from side to side, and very narrowly observing whether there be any streaks in it: this you will, unless the ivory be freshly cut, easily discover; and in this you cannot be too particular, as it is an observation of many experienced painters, "that a good piece of ivory is half the work done." There is a species of ivory which is very bad for painting on, although it has no streaks in it, being of a horny coarse nature, which will never suffer the colours to be thrown out in the brilliant manner a finer species of ivory will; you are therefore not only to be cautious in choosing ivory free from streaks, but likewise that which has the finest grain, and close. Having instructed in the mode of choosing ivory, we now proceed to treat on the manner of preparing it for painting on.

You are to heat a smoothing-iron in so small a degree, that you can hold your hand on the face of it so long as you can reckon three or four in moderate time; then put your ivory between a clean piece of folded paper, on which place the hot iron, turning your ivory frequently, until it becomes a transparent white; for you are to observe that very particularly, an opake white not answering for face-painting in miniature, as it would give a harshness and unpleasant appearance to your picture. When you think your ivory is sufficiently white for your purpose, lay it under some flat weight until it cools, as that will prevent its warping. You then proceed to prepare it; for which purpose you must pound some pumice-stone in a mortar, as clear and fine as you can, which put into a fine linen or cambric bag, tying it about midway tight, but leaving room for the pumice dust to sift through the bottom. Then get a long mustard bottle, perfectly clean and dry, in which suspend the pumice dust, covering the top with the muzzle of the bag, so as nothing can come out; then shake the bottle smartly in you hand, when the fine particles of the pumice will sift out, and remain at the bottom of the bottle, thereby pre-

venting any coarse grains from being amongst what you are going to use, which would very materially injure your ivory. Your pumice dust being prepared, scrape the leaves of ivory with a sharp penknife, until the scratches of the cutting-saw be entirely obliterated; then take either a piece of Dutch polishing rush, or a piece of middling fine patent glass paper, (the latter of which is the handiest,) and carefully polish your ivory with it, not by passing your hand backwards and forwards, but in a circular manner, until you have it pretty level; then strew some of your pumice dust on the ivory, and put a few drops of water on it; which done, with your muller work on it in a circular manner, as before, until you find every part, has equally received the pumice; which you will know by its exhibiting a dead grave appearance, those parts which have not received the pumice continuing to shine in spots, which you must still labour to do away with your pumice and muller. When you find it pumiced to your satisfaction, take a clean sponge and fair water, with which gently wash your ivory free from the pumice dust, taking care not to rub it hard, for fear of giving the ivory a gloss, that would prevent your colours from taking on it so pleasant as you could wish; after this lay your ivory to dry, and in a few hours it will be fit for use. Then you are to paste it on a piece of wove paper, by touching the back of it merely at the edges; as gum-water, or any other cement, being put near the centre of your ivory, will cause a dark unpleasant spot perhaps to appear through, in the very part where your face is to be painted.

INSTRUCTIONS *for* MIXING COMPOUND TINCTS *for the* FACE.

Purple is formed of either Ultramarine, Prussian Blue, Smalt, or Indigo, mixed with either Carmine or Drop Lake. Ultramarine, although the most beautiful and brilliant of colours by itself, yet in any mixture it loses that perfection; but it still retains a sufficient share of brightness to render it a desirable tinct in the purplish gray shadows of the face. Prussian Blue, mixed as before mentioned, makes a bright or dark purple, according as the quantities of either colours are proportioned; but indigo makes still darker, owing to its great natural depth of colour. Smalt and Carmine or Lake, form nearly the same tinct as Ultramarine, and may be used nearly for the same purpose.

Gray.

Of gray tincts there are various kinds, according to the subjects they are required for, and the parts they are to be placed in. A warm gray tinct may be made by duly portioning burnt Terra Sienna, Prussian Blue, and Drop Lake; the more Terra Sienna in it, the warmer the tinct; the more Prussian Blue and Lake, the colder. Another gray tinct, which has been used with success by

some eminent miniature painters, is composed of Prussian Blue and Chinese Vermilion; but on account of the unkind manner with which Vermilion incorporates with any other colour, it requires a greater portion of gum than ordinary to make them work or keep together. A third gray tinct, which is an excellent one, is formed of Drop Lake, Sap Green, and Prussian Blue.

Olive Tincts.

A very fine olive tinct is formed of Gall-stone, Nottingham Oker, and Carmine, or Lake; and another of Sap Green and Lake simply.

Of Hair Tincts.

A beautiful hair-colour, either dark or light, according to the quantities of colours, is made of Carmine, Lamp Black, and Sap Green. The manner of forming it is only to be acquired by practice; but the knowledge of making it, when once attained, will be found worth the time disposed of in the trial, That very difficult tinct which is often to be met with in children's hair, by the proper junction of these colours will be produced to perfection. Other hair tincts may be made of Terra de Cassel simply, or by the addition of Lamp Black. Some excellent painters make all their hair tincts of burnt Terra Sienna, Lamp Black, and Nottingham Oker, the latter being added only when there is light hair wanting to be represented. Burnt Umber has been substituted for Terra Sienna, along with Lamp Black, and forms a good tinct; but care must be taken to avoid either the greenish or reddish cast, which it is apt to produce.

TINCTS FOR FINE LINEN, GAUZE, &c.

Of all tincts in transparent painting, such as the miniature works of the present day, there is none more difficult to ascertain than the one at present we are about to treat on; for this reason, the delicacy not only of mixture, but the delicacy of touch, would require a painter to be what no man ever was, that is, *semper eadem;* for the same nicety of tinct for this purpose which a man might hit on this day, to-morrow he might not be so fortunate in, nor might he be so happy in that exquisite touch, which conveys the idea of beauty in the thinness and folding of fine linen or gauze, the true painting of which often stamps the character of an artist, and, in the general opinion, throws a vail over the defects in other parts of the picture, which the more experienced connoisseur would readily point out. We shall therefore only observe, that any of the tincts under the head gray, will, properly managed, answer the purpose. Having now pointed out the manner of preparing the delicate transparent tincts for miniature painting, we shall proceed to treat on the grosser ones, namely, those for draperies.

OF COLOURS PROPER FOR MEN'S DRAPERIES.

We shall, under the above head, make some general observations; the first of which is, that in all cloth draperies for men's portraits, it is necessary to add some Flake White, as it not only gives the colour the dead appearance which cloth exhibits, but likewise its being incorporated with the Flake White gives it a body which bears well against the face, gives value to it, and makes the flesh tincts appear to more advantage;—the next observation is, that in grinding up your draperies, you are to make them appear several degrees lighter in colour than you want them to be when dry; for this reason, the Flake White is a colour so very heavy, that after you float in your coat, it will sink to the bottom, and leave your colour several degrees darker than when it was wet; and, finally, you are not to be too heavy or thick in floating in your draperies, but merely to see that your colour be evenly spread over the part whereon your coat is to appear.

It is necessary to inform the young artist, that there are four technical terms in miniature painting, namely, Floating, Washing-in, Handling, and Marking. The first process, which is Floating, and is chiefly used for draperies, is thus performed:—Having marked with your pencil where your drapery is to be, grind up your colour on your flag, (not putting a quantity of gum-water, that would make it shine, and would frustrate your purpose,) then take a large soft hair-pencil, and, having previously laid your ivory on a very level table, fill your pencil plentifully with the colour, and lay it quick all over the parts of the ivory you want covered, seeing that it runs on every part equally, which if kept in a proper fluid state it will readily do; then lay it in some place to dry, where it is not like to receive dust, when you will have a fine level surface ready to work the shadows of your drapery on in a couple of hours. Washing-in is performed when your picture is on your desk, by filling your pencil moderately with colour, and giving a very broad stroke rather faintly, as the contrary would not answer: this manner is chiefly used in beginning the hair, back grounds, and likewise in laying on the general flesh tinct of the face. It is also used in the first touches of the dark shadows, which ever ought to be begun faint and broad. Handling is the manner in which all the fleshy parts of a miniature must be worked, after the first washing-in; and, lastly, Marking consists in the sharp spirited touches given to the different features, in order to give that animated appearance so necessary to constitute a fine picture.

Black Drapery is formed of Lamp Black burnt, and Flake White, and must be laid in with a good deal of the latter, as otherwise it would be very difficult to manage the shadows, so as to produce a pleasing effect.

Blue drapery may be made of either Prussian Blue, or Antwerp

Blue, mixed with white. Indigo being too much inclined to a blackish cast, and, as before observed of the black, a good deal of the Flake White must be mixed with it for the same reason.

Green drapery is well made of King's Yellow and Prussian or Antwerp Blue; and it is scarcely necessary to observe, the more blue the darker the green, and the more yellow the contrary.

Yellow for officers' facings, or the like, cannot be so well represented by any colour as King's Yellow, as above-mentioned, laid thin, with a moderate quantity of gum in it.

Drab colour is well represented by a judicious mixture of Umber, in its raw state, and Flake White.

A Queen's Brown, as it is called, is made of burnt Roman Oker, a little Lamp Black and Lake, with some White Flake amongst it.

Claret-colour may be well represented by a mixture of Terra de Cassel, a little Lamp Black and Lake. The more black and lake the deeper the colour.

Dark-brown can be formed by a junction of Nottingham Oker, Lake, and Lamp Black.

Lilac is made of Carmine, Prussian Blue, and Flake White.

Gray can be formed only of Lamp Black, Flake White, and the smallest quantity of Lake laid in very thin.

Reddish-brown is best made of Indian Red, very little Lamp Black, and Flake White.

Scarlet for officers' pictures, &c. is a colour very difficult to lay down rules for making, as in some pictures it is dangerous to make it too bright, for fear of hurting the effect of the face, by its brilliancy catching the eye too readily; consequently, if the subject you are painting from life be very pale, you run a very great risk indeed by annexing a very bright scarlet to his picture. The management in that point we must, therefore, leave to the young artist himself to judge of, and only mention, that a very bright scarlet is made of Chinese Vermilion and Carmine, ground together (without any Flake White;) and if you want still to render it brighter, when it is dry fill your pencil with plain Carmine, mixed with thin gum-water, and glaze it over nicely; but if, on the contrary, you wish to sadden, or take away a share of its brilliancy, add a little Flake White to it, and that will have the desired effect.

OF PAINTING THE FACE IN MINIATURE.

You are first to provide yourself with a mahogany desk for painting on, which is a box about 14 inches high, and a foot broad on the top; there is to be a lid covered with green cloth, which is to have a pair of small hinges at the front, and to lift occasionally with a supporting rail at the back, and notches so as readily to ad-

just it to any height you may choose, in the same manner as a music-desk. About the middle of the green cloth there is to be a slip of very thin mahogany, glued at each end, but the centre of it left free, to fasten your ivory by, slipping it between the mahogany and green cloth.

The next thing you are to observe is the choice of your light, which in this kind of painting cannot be too particularly attended to, it not being like oil painting, where the rays of the sun may be kept out with blinds, &c. without causing any material inconvenience. A north light, or as nearly as possible to it, must be attained. If there be more than one window in the room, the second must be closed, so as to admit no light, and the one you sit at is to have a green baize curtain against the lower part of it, to reach about a foot higher than your head, as you sit at your painting-desk, with your left hand towards the light.

Place your sitter at the distance of about a yard and a half from you, in that point of view by which the shadows will not only have their proper effect in marking the features so as to form a perfect resemblance, but likewise so as that it shall be a pleasing one; for the young artist may rely on it, that no person of any description ever yet sat for a likeness, but would wish to have that likeness as favourable as possible. This point being settled to your satisfaction, begin drawing the outlines of the face, and in this be very particular, as much depends on it. When you have them drawn correctly, and that even in such a state there appears to your own eye a degree of likeness to the subject sitting for you, begin to lay in the colour, faintly, of the iris of the eye, the shadows under the eye-brows in a gray tinct, and under the nose rather a warm purple, in broad faint washes, ever keeping this in your mind, that you must, in the process of painting the face of a miniature picture, go on faintly at the beginning, and not hurry in your colours, as such conduct will, to a certainty, make your tincts look dirty, and your picture harsh and disagreeable. Having, as before observed, laid in your gray tincts where your shadows are to fall, go on heightening them by degrees, working in hatches with a middling full pencil, not too washy, nor too dry; as the former would be the means of muddying your colours, and the latter would make them raw. When you think you have pretty strongly marked out and worked up the shadows, mix a wash of either Gall-stone, or Nottingham Oker and Drop Lake, with which faintly go over the fleshy parts of the face, where the shadows do not come, and then proceed to heighten the carnations on the cheeks, the colour of the beard, if any such appears; still working in the handling manner, as already mentioned, in various directions, so as that after some time working the intersections appear like so many nice points or dots; which appearance, in fine pictures, leads the inexperienced artist to imagine that the picture was entirely dotted in,

and is thereby led into a thousand errors and difficulties. There is a general rule you are to observe, that it is much easier to warm the tincts of your face, than to cool it, by working proper colours over it. It is therefore advisable to begin with cool grays and purples, and towards the finishing of the picture to add warmth, if necessary, by gradually working such colours as Gall-stone, Terra Sienna, or the like, over, in addition to the Carmine or Lake that may be necessary to produce the tinct of nature. On the subject of managing the colours in painting a miniature it is unnecessary to say any thing more; we shall therefore only advise the amateur, or young artist, to procure a good miniature picture, painted by some eminent artist, and to closely copy it, calling these observations often to his aid; an attention to which, we dare venture to say, will facilitate his improvement.

INSTRUCTIONS FOR PAINTING IN WAX CRAYONS.

Painting in wax crayons is an art at present scarcely known, and, when properly managed, produces a very pleasing effect. It differs very materially from the former style of crayon painting, the colours being incorporated with wax, instead of pipe-clay, which is the bases of dry crayons; it also has the particular advantages of being better calculated for minute drawings, and not moulder-ing away or rubbing off the paper; but it requires the assistance of washes in water-colours to improve its effects, as from the nature of the wax the frequent workings over of the crayons would cause glassiness, that would prevent their taking hold in the latter part of the finishing, so as to produce the strength required; therefore it is to be observed, that the water-colours are to be used on beginning the picture, and in finishing it. The crayons to be judiciously worked on the water-colours; when they produce the appearance of an elegantly finished stippled engraving, coloured in the plate, the tooth or grain of the paper catching the crayons in dots, (when worked gradually with a light hand,) in a wonderfully pleasing manner.

We shall now proceed to the instructions, which we shall confine under a few heads: namely, the kind of wax to be used in making the crayons; the colours fit to be incorporated with it; the choice of paper; and the mode of using the crayons.

The wax proper to be used in making crayons, must be bleached bees-wax, entirely free from adulteration either by spermaceti or tallow. It must not only be pure, but likewise of the hardest kind, of which the Russian wax is the best, although in colour not quite so fine as either the American or English wax; but its hardness gives a firmness to the crayons, and prevents a greasiness which softer wax would create.

The colours proper for mixing into crayons, must be the following, viz. for yellows, King's Yellow, or Yellow Oker; for blues,

Antwerp or Prussian; for reds, Carmine, Lake, and Chinese Vermilion; for browns, Umber, burnt and unburnt; for blacks, Lamp Black only. As to compound tincts, they are to be produced by a judicious management of the water-colours over the crayons; and this rule, with respect to the colours proper to be used for crayons, is to be particularly observed, that none are fit for the purpose but such as, in their dry unmixed state, will mark on paper pretty freely: for the reader may easily judge, that the tenacity of the wax would completely prevent any hard colour from working that was incorporated with it.

Having procured the kind of wax mentioned, you are to have a nice-glazed white pipkin, perfectly clean and free from any greasy particles; and having previously ground your colours on a flag with your muller perfectly fine in fair water, and dried, put a small quantity of wax into the pipkin, which you are to place over a very slow fire; when the wax is entirely dissolved by the gentle heat, (for if it bubbles it is spoiled,) gradually sprinkle in your colour, stirring it with an ivory pencil handle, until you find it perfectly mixed, at the same time observing that you do not overload the wax with colour, as it will make the crayons too brittle; nor are you to put in too little colour, as it makes them faint and work greasy; so a medium is to be observed, to ascertain which, practice only will conduce. There are some colours, such as Vermilion, which, if it receives too great a heat, turns black; and that must be very cautiously observed, as Vermilion, in this kind of painting, is a highly useful colour; as is also Lamp Black, a harder kind of crayon, from which it is to be made by mixing some of it in its raw state with strong glue, letting it harden, and then burning it in a crucible, (as directed in the instructions for calcining colours for miniature painting;) then pulverizing it on your flag, and mixing it with your wax, as before mentioned. This kind of black crayon is most excellent for giving sharp touches in dark parts, and for making sketches to refresh the memory; is much superior to Italian chalk, as nothing will cause it to rub or spoil, it remaining as immoveable as writing ink, and working extremely pleasant.

The paper fit to be used in wax crayon painting, must be of the wove or vellum kind; but as of this there are several sorts, it is necessary to mention, that it must be of a middling fineness; for if too coarse, the grain will catch the crayons in dots so remote from each other, as to make your work look unpleasant, and if the paper be too fine, it will not catch the crayons as it ought, but clog your painting without producing any effect. The only rule, therefore, for choosing your paper, is to go to the stationer's, and, taking a piece of soft black crayon in your pocket, inquire for wove paper, and by gently rubbing the crayon on a few sheets of different kinds, you will then become a judge of what paper is the best for your purpose; which experience you will attain without

any expence worth mentioning: having procured this necessary article to your satisfaction, you then proceed to work.

The desk you are to work on must be much larger than the one mentioned for miniature painting, this kind of work being often used for larger sizes than that style of painting is.

Having your sitter placed in the same manner as pointed out in the treatise on miniature painting, with a soft piece of charcoal sketch faintly the distances and forms of the features; then touch them in more strongly with your crimson or black crayon, still altering until you are perfectly certain you have a correct outline, which in this kind of painting is absolutely necessary; for if in your fair drawing you commit an error in your outline, you never can alter it, the crayons being in their nature so adhesive, that nothing will remove them. Having on your first sheet made your outlines correct, rub the back of the face part with crimson crayon, the hair part with a suitable coloured one; and the drapery, if white, with black: then laying the paper on a fair sheet, go over the lines of your sketch with a tracer, when you will transfer, in a very neat manner, your outline ready to colour in. You are then to mark in the features of your sitter more strongly with crayon or water-colour, and a fine pencil; ever observing, when you use it, to work over with a suitable coloured crayon, as it is that which will give it the beautiful dotted appearance so much to be admired.

Having marked in the features sufficiently strong to put the likeness out of danger of being spoiled, make a wash of Yellow Oker entirely over the fleshy parts, deepening its tincts according to your subject; wash in your colour of the eyes, lips, hair, &c. all which being dry, work with your different coloured crayons on the parts, until you produce the effects required; filling up any interstices of the crayons with dots of water-colours and a fine pencil. As to the tinct for your linen shades, the black crayon will produce that in every degree, the paper answering for the lights of any coloured drapery, for then you are to wash in and shadow it with the crayons. Your paper is to be perfectly dry, otherwise the work will appear glazy; but even should that be the case, hold it before the fire, and the shining appearance will instantly vanish. With respect to your back grounds, as this style of painting is intended to be light and sketchy, sky and back grounds are to be preferred; to manage which the best way, is to stamp them in with dry colour, to whatever tinct you find pleasing, which will give a proper value to the appearances of your wax crayons. Your drawing, either of portrait or landscape, being finished, have ready a large flat board, on which you are to stretch a sheet of royal paper; and having pasted the back of your drawing with some flour paste mixed with isinglass, lay it on the royal paper, and carefully press it in all directions with a soft towel or handkerchief; when your work is completed.

OF GILDING UPON GLASS.

THE art of gilding upon glass, which is a revival and improvement upon attempts made many years ago, is chiefly used for decorating the borders of prints, in executing name-plates, and inscriptions for various purposes; as also for ornamental decorations in a variety of elegant works, with different coloured grounds; but as black is the most general one in demand, I shall first proceed to treat on that, in two ways of performing it.

You are to procure some of the finest isinglass, which you will distinguish by holding between you and the light, when that which is white and transparent is the best, and the contrary is totally unfit for this purpose:—you are to dissolve it in very clean water, pretty thick, and strain it through a linen cloth, then into a tea-cup of very clean milk-warm water; put about the size of a small pea of the isinglass jelly, which let gently incorporate with the water: then having your glass that is to be gilt quite clear, and free from any dirt or grease, get some leaf-gold, the less porous in beating the better, put it on a gilding cushion, and cut it in pieces sized for the purpose, according to the breadth you want to have your work gilt; then touch with a hair pencil, dipped in the thin isinglass water, on the glass, and while moist lay on your leaf-gold, piece by piece, until you have the parts you want covered. The leaf will instantly adhere to the glass; then place it within air of the fire, in a slanting position, until it dries, which will be in a few minutes. While it is gently warm, take a piece of clean cotton wool, and rub the gold to the glass smartly, until you not only find the superfluous pieces of leaf-gold gone, but that likewise the back of the part gilt receives a kind of polish; then proceed to lay on a second coat of gold, in the same manner as the first, drying it as before, and polishing it; and so a third coat, which is fully sufficient, and to gild properly cannot be dispensed with. Then take the size of the print or drawing which is to be framed, and laying it on the gilt part of the glass, mark where the corners are to come, with a hair pencil, and some dark colour; after which, being provided with a long wooden ruler, and a pointed piece of ivory, draw two parallel lines out of your gold, and with a mahogany or deal stick, pointed cautiously, work away the superfluous part, leaving the gold fillet, which is to encompass your picture, sharp and neat; when if you have a mind to ornament it by any other lines to appear black, in the centre, lay on your ruler, and with your ivory point scribe them, and then varnish, having some black Japan, to which a little burnt Lamp Black has been added, to deepen its colour. Paint it all over the gilt part of your glass, and the space between it and the edge; then set it to dry, which will take place in a few hours, when you are to lay out the breadth of the black line, that

is to be inside your gilding, scribe it with a sharp point, and cut away the waste black with a graver, or some sharp instrument.

If you want to cut figures, or any kind of ornament, out of your gold, after your glass is gilt, have a drawing of your design on paper, at the back of which rub some powdered red chalk, and the smallest quantity of fresh butter; lay the paper on the gold, and with a bluntish ivory point go over the lines of the drawing, and they will be nicely transferred on the gold; when you can, with an ivory point, trace them out of the gold, and shade them agreeable to either fancy, or from the drawing you have by you; and then, by mixing any colour you choose with white copal varnish, you may vary your ground as you think proper.

But the most important secret in glass-gilding is, in an instant after your glass is blacked, taking away the parts where your gold is to appear, and the remainder of the black to stand fast, by which means the black gilding work is done in one half the time, and with half the gold-leaf. The process is simple, and thus performed:—You are to get the very best black japan varnish, such as is used for the roofs of carriages, to which you must add a very small share of burnt Lamp Black, very finely ground, in spirits of turpentine; then with a large flat varnish brush give your glass one even thin coat, holding it between you and the light, observing that it does not appear a thick dead black, but exhibits a degree of transparency, and not so much so as to prevent its appearing a good black at the right side of the glass. After this you are to have your letters, or ornaments, drawn on paper, as before mentioned, and trace it in the same manner on your black varnish: when it is perfectly dry, the drawing will be very critically transferred to the black. You are then to get a fine needle, and fix it in a wooden handle firmly, with which you are to scribe the outlines of what black is to come out, through the varnish, so as not an edge hangs to the main body of the black. Then take some thick brown paper, dip it in water, and squeeze it gently, and spread it over the parts of the varnish you want to detach from the glass; and in a few minutes, by raising one edge of the black, it will all peel away as clean from the glass as if it never was on it, in an instant. When all the black you want is taken out, lay your glass to the fire, and the remaining part of the varnish will instantly become hard as ever, and be ready to have the gold put on.

THE ART OF DYEING.

THE theory of *dyeing* is far from being thoroughly known, or established; though many facts and observations, and particular processes, have been offered for this purpose. We shall collect the principal of them in the sequel of this article.

The basis of a just history of *dyeing*, must be a theory of light and colours. Two things, it may be observed, are chiefly aimed at in the inquiry of colours: the first, to increase the *materia tinctoria*; the second, to fix those colours we have. In order to these, it may be remembered, that some colours are *apparent*, as those of flowers, the juices of fruits, and those of animals.—Others are *latent*, and only discovered by the effects which the several species of salts, and other things have on them.

Concerning the *apparent* colours of vegetables and animals, and the effects of different salts in changing them from one colour to another, we have many instances in Mr. Boyle, collected and ranged in a new order by Dr. Lister: as, 1. That acid salts advance the colours of flowers and berries; thus they make the infusion of balustia, or pomegranate-flowers, red roses, clove-july-flowers, mezereon, peas-bloom, violets, and cyanus-flowers, of a very fine red; and the juices of the berries of ligustrum, of black-cherries, and buck-thorn berries, of a much fairer red. To the same purpose it is observed, that acid salts make no great alteration upon the white flowers of jessamine and snow-drops.

2. Urinous salts and alkalis, on the contrary, quite alter the colours of the flowers last named, as well as the juices of the berries above-mentioned, from red to green.

3. Urinous salts and alkalis advance, at least they do not hurt, the colours of the juices of vegetable leaves, woods, and roots. Thus, urinous spirits and alkalis make the yellow infusions of madder-roots red; of Brazil-wood, purplish; of lignum nephriticum, blue; the red infusion of logwood, purple; and that of the leaves of senna, red.

4. Acid salts quite alter the said infusions from red, or blue, to yellow.

5. Cochineal, which of itself is red, upon the infusion of oil of vitriol and acid salt, strikes the most vivid crimson that can be imagined; and with urinous salts, and alkalis, it will be again changed into an obscure colour betwixt a violet and a purple.

6. All red, blue, and white flowers, are immediately, upon the affusion of an alkali, changed to a green colour, and thence, in no long process of time, they turn yellow.

7. All the parts of vegetables which are green, will, in like manner, strike a yellow with an alkali.

8. What flowers are already yellow, are not much changed, if at all, by an alkali, or urinous spirit.

9. The blue seed-husks of glastum sylvestre, old gathered, and dry, diluted with water, stain a blue, which, upon the affusion of ley, strikes a green; which said green or blue, being touched with oil of vitriol, *dyes* a purple; and all these three colours stand.

10. On the tops of the fungus tubuloses are certain red knots, which, upon the affusion of ley, will strike a purple, and stand.

As for the *latent* colours in animals and vegetables, discovered to us by affusion of salts, they likewise are very numerous. We will only mention a few. 1. The milky juice of the lactua sylvestris costa spinosa, and sonchus asper et lævis, upon the affusion of ley, will strike a vivid flame colour, or crimson; and, after some time, quite degenerate into a dirty yellow.

2. The milk of the cataputia major, upon the affusion of ley, especially if it be drawn with a knife, and have at any time stood upon the blade thereof, will strike a purple or blood-red colour, and soon after will change into a dull yellow.

3. The common hawthorn caterpillar will strike a purple, or carnation, with ley, and stand.

4. The heads of beetles, primroses, &c. will, with ley, strike the same carnation-colour, and stand.

5. The amber-coloured scolopendra will give, with ley, a most beautiful and pleasant azure, or amethystine, and stand.

It remains to be observed, 1. That in all the instances above-mentioned, whether vegetable or animal, there is not one colour truly fixed; though there may be some use made of them as they are. By *not truly fixed*, we mean, not proof against salt and fire; for what seem to stand, and be ley-proof, are either wholly destroyed by a different salt, or changed into a very different colour, which must needs prove a stain and blemish when it shall happen in the use of any of them.

2. That both the apparent and latent colours of vegetables are fixable; an instance whereof we may observe in the seed-husks of glastum, and the use *dyers* make of the leaves of that plant, after due preparation.

3. It is probable, from the same instance, that we may learn from the colour of some part of the fruit, or seed, what colour the leaves of any vegetable, and the whole plant, might be made to yield for our use.

4. That the latent colours of vegetables are pre-existent and not produced; from the same instance of woad, and likewise from this, that the milky juice of lactua sylvestris affords of itself a red serum.

5. That the change of colours in flowers is gradual and constant.

6 That the colours of flowers, which will not stand with ley, seem to be wholly destroyed by it, and irrecoverable. Thus one part of a violet leaf, under the affusion of ley, is changed very soon into yellow, and will never be revived into a red by an acid salt; but if another part of the same leaf be still green, it will be revived.

7. The dryness seems to be a means, if not of fixing, yet of bringing the vegetable colour into a condition of not wholly and suddenly perishing by the otherwise destroying alkali.

8. That those plants, or animals, which will strike different yet vivid colours, upon the affusion of different salts, and stand, as the cochineal and glastum, are of all others to be reckoned the best.

Many more valuable colours may be drawn from the vegetable kingdom, if the world would be at the pains of inquiring more minutely into the properties of plants.

With respect to the theory of *dyeing*, it is farther to be observed, 1. That all the materials, which of themselves give colour, are either red, yellow, or blue; so that out of them, and the primitive fundamental colour, white, all that great variety which we see in dyed stuffs arises. 2. That few of the colouring materials, (as cochineal, soot, wood-wax, or woad,) are, in their outward and first appearance, of the same colour, which by the slightest solution in the weakest menstrua, they dye upon silk, cloth, &c. 3. That many of the colouring materials will not yield their colours without much grinding, steeping, boiling, fermenting, or corrosion by powerful menstrua; as redwood, weld, woad, arnotto, &c. 4. That many of the said colouring materials will of themselves give no colouring at all, as copperas or galls, or with much disadvantage, unless the cloth, or other stuff to be dyed, be first covered or incrusted as it were with some other matter, though colourless aforehand, as madder, weld, and brazil, with allum. 5. That some of the colouring materials, by the help of other colourless ones, do strike different colours from what they would alone, and of themselves; as cochineal, and brazil. 6. That some colours, as madder, indigo, and woad, by reiterated tinctures, will at last become black. 7. That though green be the most frequent and common of natural colours, yet there is no simple ingredient which is now used alone to dye green with upon any material; sap-green, the condensed juice of the rhamnus, or buckthorn berry, being the nearest; and this only used by country people. 8. There is no black thing in use which dyes black; though both the coal and soot of most things burnt or scorched be of that colour; and the blacker, by how much the matter, before it was burnt, was whiter, as in the famous instance of ivory-black. 9. The tincture of some *dyeing* stuffs will fade even with lying, or with the air, or will stain even with

water; but very much with wine, vinegar, urine, &c. 10. Some of the dyers' materials are used to bind and strengthen a colour; some to brighten it; some to give lustre to the stuff; some to discharge and take off the colour, either in whole or in part; and some out of fraud, to make the materials dyed, if costly, to be heavier. 11. Some *dyeing* ingredients, or drugs, by the coarseness of their bodies, make the thread of the dyed stuff seem coarser; and some by shrinking them, smaller; and some, by levigating their asperites, finer. 12. Many of the same colours are dyed upon different stuffs with different materials; as redwood is used in cloth, not in silk; arnotto in silks, not in cloth; so that they may be dyed at several prices. 13. Scouring and washing of stuffs to be dyed, is to be done with appropriate materials; as sometimes with ox-galls, sometimes with fuller's-earth, sometimes with soap; this latter, however, is pernicious in some cases, where pot-ashes will stain or alter the colour. 14. Where great quantities of stuffs are to be dyed together, or where they are to be done with great speed, and where the pieces are very long, broad, thick, &c. they are to be differently handled, both in respect to the vessels and ingredients. 15. In some colours and stuffs the tinging liquor must be boiling; in others cases only blood-warm; in some it may be cold. 16. Some tingent liquors are fitted for use by long keeping; and in some the virtue wears away by the same. 17. Some colours, or stuffs, are best dyed by reiterated dippings even into the same liquor at several intervals of time; and some by continuing longer, and others for a shorter time therein. 18. In some cases, the matter of the vessels wherein the liquors are heated, and the tinctures prepared, must be regarded; as that the kettles be pewter for the bow-dye. 19. Little regard is had how much liquor is used in proportion to the dyeing drugs; the liquor being rather adjusted to the bulk of the stuff, as the vessels are to the breadth of the same; the quantity of *dyeing* drugs being proportioned to the colour higher or lower, and also to the stuffs; as likewise the salts are to the *dyeing* drugs.

Concerning the weight which colours give to silks, (for in them it is most taken notice of, as being sold by weight, and being a commodity of great price,) it is to be observed, that one pound of raw silk loses four ounces by washing out the gums and natural sordes. That the same scoured silk may be raised to above thirty ounces from the remaining twelve, if it be dyed black with certain materials. That the reason why black colours may be dyed the heaviest is, that all ponderous drugs will dye black, being all of colours lighter than it; whereas, perhaps, there seem to be few or no materials wherewith to increase the weight of silk which will consist with fair light colours; such as will, having been used, as white arsenic to carnations.

Of things used in dyeing, especially black, nothing increases

weight so much as galls; by means whereof black silks recover the weight which they lost by washing out their gum. Nor is it counted extraordinary, that blacks should gain about four or six ounces in the dyeing upon each pound. Next to galls, old fustic increases the weight about $1\frac{1}{2}$ in 12. Madder about an ounce in the pound. Weld half an ounce. The blue-fat, in deep blues of the fifth stall, adds no considerable weight. Neither do log-wood, cochineal, or arnotto; nor even copperas itself, where galls are not used. Slippe adds much to the weight, and gives a deeper black than copperas, which affords a good excuse for the dyers that use it.

Dyeing Ingredients, or the *Materia Tinctoria,* are best reduced under two heads:

Colorata, or those which properly give the colour.

And *Noncolorata,* used to prepare the stuffs for better taking the dye, and to heighten the lustre of the colours.

As to the colouring ingredients, *Colorantia Colorata,* we have 1. Iron and steel, or what is made from them, which are used in dyeing blacks; though how they contribute thereto is not so obvious: we know that green oaken boards become black by the friction of a saw; a green sour apple, cut with a knife, turns of the same colour; the white grease wherewith the wheels of carriages are anointed, becomes likewise black, by means of the iron boxes wherewith the nave is lined, and the friction between the nave and the axle-tree; and that an oaken stick becomes black by a violent friction against other wood in a turning lathe; and the black colour on earthenware is given with scalings of iron, vitrified. From all which it seems to follow, that the business of blacking lies in the iron, and particularly in its ustulation or astriction. Be this as it will, copperas, the most usual ingredient for *dyeing* black, is the salt of the pyrites wherewith old iron is incorporated. And wherever this is used, some of the astringents are to accompany it. 2. Red-wood, chopped and ground in a mill, is used for *dyeing* cloth, rugs, &c. of the coarser sort. Its tincture, which is a sort of brick colour, is got out by long boiling it with galls, and the cloth with it. It stands better than brazil. 3. Brazil, chopped also, and ground, dyes a pink-colour, or carnation, nearest approaching cochineal: it is used with allum: with pot-ashes it also serves for purples. It easily stains. 4. Madder gives a colour nearly approaching the *bow-dye,* or new scarlet: those called bastard scarlets are dyed with it. It endures much boiling, and is used both with allum and argol, and holds well. The brightest dyes with madder are made by *over-dyeing* the stuff, and then discharging part of it, by back-boiling, in argol. It is used with bran-water, instead of white liquor. 5. Cochineal, used with bran-liquor, in a pewter-vessel, with aqua-fortis, gives the dye called among us, though improperly, *scarlet in grain.* Too much acid takes off the intense redness of the colour, and turns,

it towards an orange, or flame-colour. With this colour the Spanish leather and wool, used by ladies, are dyed. 6. Arnotto gives an orange colour, especially to silks, linens, and cottons; for it does not penetrate cloth: it is used with pot-ashes. 7. Weld, by the help of pot-ashes, yields a deep lemon-colour; though it is used to give all sorts of yellow. 8. Wood-wax, or green-wood, called also *genista tinctoria*, and the *dyer's weed*, has the like effect as weld, though its use is chiefly confined to coarse cloth. It is set with pot-ashes or urine. 9. Fustic is of two sorts, young and old: the former chopped and ground, yields a kind of reddish orange-colour: the latter a hare-colour, distant several degrees of yellow from the former. It spends with or without salts, works either hot or cold, and holds firm. 10. Wood-soot, containing not only a colour, but a salt, needs nothing to extract its dye, or make it strike on the stuff. The natural colour it yields is that of honey; but it is the foundation of many other colours, on wool and cloth only. 11. Woad, ground or chopped with a mill for the purpose, is made up into balls; which being broken, and strewed on lime or urine, is used with pot-ashes, or sea-weed, and gives a lasting blue. The lime or chalk accelerates the fermentation of the woad, which in three or four days will work like a guile-tub of beer, and be covered with a greenish froth or flower. An intense woad-colour is almost black; that is, of a damascene colour. It is the foundation of so many colours, in different degrees or shades, that the dyers have a scale whereby to compute the lightness and depth of this colour. 12. Indigo is of the like nature, and used for the same purpose as woad, only that it is stronger. 13. Logwood, chopped and ground, yields a purplish blue: it may be used with allum. Formerly it was of little repute, as a most false and fading colour; but, since it has been used with galls, it is less complained of.

The dyeing materials are generally applied in decoctions made in water, more or less strong, according to the occasion; sometimes by only dipping the articles to be coloured in the vat of dye; sometimes by boiling the stuff therein; and sometimes by leaving it a day or more to steep. As to the allum, in dyeing silks, it is always applied cold, in which state alone it contributes to the brightness of the dye.

The *non-colouring ingredients* are, certain restringent or binding materials, as galls, sumach, alder-bark, pomegranate-peel, walnut rinds and roots, sapling-bark, and crabtree-bark. Certain salts, as allum, argol, salt-petre, sal-ammoniac, pot-ashes, lime, and urine. Liquors, as well-water, river-water, aqua-vitæ, vinegar, lemon-juice, aqua-fortis, honey, and molasses. Gums, as tragacinth, arabic, mastic, and sanguis draconis. Smectis, or abstersives, as soap, fuller's earth, linseed oil, ox-gall, &c. Metals and minerals, as steel-filings, slippe, and pewter; to which add copperas, verdegrise, antimony, litharge, and arsenic. Lastly

bran, wheat flour, yolk of eggs, leaven, cummin-seed, fenugreek-seed, agaric, and senna.

Among the *non-colouring, drugs*, then, from the mineral kingdom come, 1. Copperas, steel filings, and slippe, (the stuff found in the troughs of old grind-stones, whereon edge tools have been ground,) these are used for all true or Spanish blacks, though not for the Flanders black. 2. Pewter, dissolved in aqua-fortis, used for the new scarlet or bow-dye. 3. Litharge, though not owned or allowed, is used to add weight to dyed silk. 4. Antimony, used chiefly for the same purpose, though it also contains a tingent sulphur; which, by precipitation, &c. affords a great variety of colours. 5. Arsenic, used in dying crimson, on pretence of giving a fine lustre. 6. Verdegrise, used by linen-dyers, in their yellow and green colours. 7. Allum, much used, though with what intent is not agreed on: whether to fix the dye, to render water a proper menstruum to extract the tingent particles of certain hard drugs; or to scour the sordes, which may interpose between the stuff and the dye, and hinder their due adhesion; or to intenerate the hairs of wool, and hair stuffs, that they may better imbibe their colours; or to contribute to the colour itself, as copperas does to galls in making black, or juice of lemons to cochineal in carnations, or aqua-fortis impregnated with pewter, in the bow-die; or, which seems most probable, to serve as a venculum between the cloth and the colour, as clammy oils and gum-waters do in painting; allum being a substance whose acculeated particles, dissolved with hot liquors, will enter the pores of stuffs, and on which the particles of dying drugs will catch; though it may also serve another use, viz. to dry up certain particles which disagreed with the colour to be superinduced; to which add, that it may also serve to brighten the colour, by incrustating the stuff to be dyed with its crystals, on which the dye coming to be applied, has a finer effect than if it were applied on a scabrous matter, such as unallumed cloth is. 8. Bran and bran-water, whose flour entering the pores of the stuff, levigates its surface, and thus renders the colour laid on it more beautiful; much as woods to be gilded, are first smoothened over with the white colours. 9. Salt-petre, used chiefly in aqua-fortis, in the bow-dye, to brighten colours by back-boiling. For which purpose, argol is more commonly used. 10. Lime, or chalk, used in the working of blue-vats.

Non-colouring ingredients of the animal kind are, 1. Honey. 2. Yolk of eggs. 3. Ox-gall; though this and the two last are only used by a few particular dyers, to scour, promote fermentation, and increase weight. 4. Stale urine, used as a lixivium to scour, also to help the fermenting and heating of woad; though it is also used in the blue-vats instead of lime. In reality, as it discharges the yellow wherewith blue and most greens are compounded, it is used to spend well withal; yet it is known, that

the urine, or cold mud of pissing places, will dye a well-scoured piece of silver of a golden colour; it being with this (not Bath-water, as imagined,) that the Bath six-pences, &c. are prepared.

To the class of non-colouring ingredients, may also be added water, by dyers called *White Liquor*, which is of two sorts: 1. Well-water, used in reds, and in other colours wanting restringency, as well as in dying stuffs of loose contexture, as calico, fustian, and the several species of cottons; but bad for blues, and making yellows and greens look rusty. 2. River-water, softer and sweeter than the former, and dissolving soap better; used in most cases by the dyers, for washing, rincing, &c. their cloths after dying. 3. Liquor absolutely so called, which is bran-liquor, made of one part bran, and five of river-water, boiled an hour, and put in a leaden cistern to settle: four or five days in summer turn it too sour, and render it unfit for use. Its office is to contribute to the holding of the colour. It is known, that starch, which is only the flour of bran, makes a clinging paste, which will conglutinate paper, though not wood or metals. Accordingly bran-liquors are used to meally dying-stuffs, as to madder, which is rendered clammy and glutinous by being boiled in bran-water, and thus made to stick the better to the dyed stuff. 4. Gums tragacinth, arabic, mastich, and sanguis draconis, are used in dyeing silk, chiefly to give it a glossiness, which may make it seem finer, stiffer, and to increase its weight.

The Art of DYEING may be divided into as many branches as there are different colours to be communicated, and sorts of different stuffs to be the subjects of it; but we shall only treat of a few which are most important.

DYEING *of Cloths, Serges, Druggets, and other Woollen Manufactures.*—With respect to *black*, in cloths and stuffs of price, it is begun with a strong decoction of woad and indigo, which gives a deep blue. The use assigned for this blue ground is, that the cloth, having already a considerable body of colour, may require less of the blackening materials, and consequently be less weakened, than if it was dyed directly from white to black: besides, blue is essential to the production of the black dye; for without either a blue ground, or a blue superadded to the vitriol and galls, no other than brown dyes are obtained. Logwood is the material which adds blackness to the various shades of brown produced by vitriol and gall; and this black dye, though not of the most durable kind, is the most common. On blue cloth, a good black may be dyed by vitriol and galls alone; but even here, an addition of logwood contributes much to improve the colour. A hundred pounds of woollen cloth, dyed first to a deep blue, require for the black dye about five pounds of vitriol, five of galls, and thirty of logwood. The galls beaten into moderately fine powder and tied up in a bag, are boiled for a little time in a copper of water sufficiently for working the cloth in. The blued cloth,

after being steeped in river-water, and drained, is in this state put into the boiling decoction of the galls, and kept turning therein for two hours or more; the bag of galls being now and then squeezed, in order to extract their virtues. The logwood, being rasped and shaved into small chips, or pulverized, is boiled in another copper for several hours: and this liquor is usually prepared a considerable time before it is used, as its colour improves by keeping. When this liquor is made of a scalding heat, the vitriol is thrown into it; and as soon as it is dissolved, the galled cloth is put in. A boiling heat should never be used after the vitriol is added to the liquor, because it would augment the corrosive power of the salt, and impair the beauty of the colour, by hastily extricating part of the ferruginous matter of the vitriol in an ochery form, before it can come sufficiently in contact with the astringent substance with which the cloth is impregnated. The cloth is continually turned about in the liquor, and occasionally taken out and aired, which operation contributes to secure the colour. After two hours continuance in the dye, the cloth, having received a good black, is taken out, washed with cold water, and passed through the fulling mill. Superfine cloth is fulled three times with warm solution of soap, by which the superfluous colour is discharged, and the cloth softened. The cloth is improved neither in beauty nor durableness of colour, by being repeatedly passed through the *dyeing* liquor, or by increasing the quantity of ingredients first used, after it has once acquired a full black colour. Our dyers use a small quantity of verdegrise for some of the superfine black cloths: but this is more frequently used by the French.

Simple *grays*, which are no other than shades of black, are dyed nearly in the same manner as the full blacks; only by using a less proportion of the dyeing ingredients, or continuing the cloth in the liquor for a shorter time. These simple grays are dyed from white cloth, without any previous ground of blue or other colours. There are also a multitude of compound grays and browns produced from cloth died blue, red, yellow, brown, or of colours compounded of these, by darkening them with the black dye. Scarlet is dyed with kermes and cochineal, with which may also be used agaric and arsenic. Crimson scarlet is given with cochineal, mastich, aqua-fortis, sal-ammoniac, sublimate, and spirit of wine. Violet, scarlet, purple, amaranth, and pansy-scarlets, are given with woad, cochineal, indigo, braziletto, brazil, and argol. For common reds, pure madder is used, without any other ingredients. Crimson-reds, carnations, flame and peach-colours, are dyed according to their several hues, with cochineal, mastich, without madder, or the like. Crimson-red is prepared with Roman allum, and finished with cochineal. Peach-colour must be back-boiled a little with galls and copperas, or the like. Orange-aurora, or golden-yellow, brick-colour, and onion-peel colour,

are given with woad and madder, tempered according to their respective shades. For blues, the dark are given with a strong tincture of woad, the brighter with the same liquor as it weakens in working. Dark browns, minims, and tan-colours, are given with woad, weaker in decoction than for black, with allum and pot-ashes; after which they are maddered higher than black; for tan-colours, a little cochineal is added. Pearl colours are given with galls and copperas; some are begun with walnut-tree roots, and finished with the former; though, to make them more serviceable, they usually dip them in a weak tincture of cochineal, Greens are begun with woad, and finished with weld. Pale yellows, lemon-colour, and sulphur-colour, are given with weld only. Olive-colours of all degrees are first put in green, and taken down again with soot, more or less, according to the shade required. Feulemort, hair-colour, musk, and cinnamon-colour, are given with weld and madder. Nacarat, or bright orange-red, is given with weld and goat's-hair, boiled with pot-ashes. Fustic here is forbid, as a false colour.

THE

ARTIST'S ASSISTANT.

PART II.

OF DRAWING.

DRAWING is the art of representing, by outlines and shadows, the various productions of nature and art, and of enlarging and contracting objects in the most exact proportion.

This art recalls to our memory things long since past, and rescues from oblivion the deeds of our illustrious ancestors, at the same time that it revives their image in our mind, by preserving their features for many generations: in short, it may be said to be the silent, but most expressive, language of nature, which speaks to the eye, is understood by all nations, and conveys an idea where even words themselves would prove deficient.

After given some general directions for the attainment of this truly polite and rational amusement, which is the basis on which all the rest of the arts depend, we shall consider it more particularly under the following heads, and lay down the most copious and intelligible rules for each respectively, viz.

Copying of Draughts—Enlarging and Contracting—Imitation of Life—Drapery—Landscape—Light and Shade—History.

The implements necessary for drawing are,—a ruler, compasses, charcoal, a black-lead pencil, penknife, port-crayons, black, white, and red chalk crayons, Indian ink, crow-quill pens, camel's-hair pencils, fitches, paper of several sorts, and port-folios.

General Rules for Drawing.

The first thing to be observed is the choice of proper originals; and here we would recommend Le Clerc's Principles of Drawing, as the easiest and best calculated for the instruction of beginners. This may be had, price 3s. 0d. at most of the booksellers' in Great-Britain.

Having provided this, begin with the outlines of the several features, as the eyes, nose, mouth, ears, &c. as they occur in the book. Practise these often over, till you are quite master of them; then proceed to a profile, or side face; after that to an oval, or full face; always remembering, that each of these must be perfectly attained before you venture to proceed further.

When you can copy a face correctly, the next thing is to draw the several limbs or parts of the body, as the hands, arms, legs, feet, &c. then go to the body itself; which having done, you will be able to undertake a whole figure, observing carefully the exact proportions and bearings of one part with the other.

The learner ought to be particularly cautious that he does not attempt a whole figure, before he has made himself master of the several parts, for this is beginning his work at the wrong end, and is almost similar to a man attempting to raise a building without a foundation.

As for beasts, birds, plants, &c. we deem it useless to give directions for drawing them, as it is well known that he who has so far improved his ideas as to be able to draw a human figure correctly, will find it no difficulty to perform every other branch of this art.

Sketch or draw all your outlines faintly, with a piece of soft charcoal (which may be known by the pith in the middle) cut to a point like a pencil; and when you see any thing amiss, whisk it out with a handkerchief or feather, correct your errors with a black-lead pencil, and compare your work with the original, till every part of them correspond. This done, finish your outlines with black-lead or Indian ink. This advice, properly attended to, will save you an infinite deal of trouble, in drawing over and over again, to your no small discouragement.

If you prefer Indian ink, rub it with water upon a marble, and with a crow-quill pen perfect your outlines; then rub out the marks of the pencil with Indian rubber. Keep three or four different shades of ink in the hollows of your stone, to distinguish your distances, reserving one of the holes for water.

When you are thoroughly versed in the outlines, your next business will be to learn to shadow: but of this hereafter, under the articles of Light and Shade.

Be not too hasty at first setting out, which will but impede your progress, and hinder your improvement: whereas by bestowing a little more time, you will attain perfection sooner than you can well imagine, and expedition will come of itself, as you become more experienced.

Of Copying of Draughts.

When you would copy a print or drawing, exactly of the same size, rub the back of it with the dust of red-chalk or black lead; lay this upon your paper, and pin it down at the four corners; then with a blunt point trace the outlines and breadths of the shadows: which done, having carefully examined it, to see that nothing be omitted, take it off, and finish it with the pencil or pen.

Another way to make an exact copy, and at the same time to preserve the original, is to lay a piece of transparent paper upon it, and draw the outlines thereon with a black-lead pencil; then between that and the paper you intend to draw upon, place a piece of thin post paper, reddened or blackened at the back; after which proceed to trace and finish it according to the foregoing rule.

If you would reverse your original, you need only turn the transparent paper, with the drawing you have made upon it, downwards upon the post paper, and trace it as above directed.

Of Enlarging and Contracting.

Divide your original with a pair of compasses into any number of squares, and rule them across with a black-lead pencil from side to side, and from top to bottom.

Then having your paper of the size you intend, divide it into the same number of squares, either bigger or less, as you enlarge or contract it.

Place your original before you, and draw square by square the several parts; observing to make the part you are drawing fall into the same part of the square as it does in your original. To prevent mistakes, number the squares both of the original and copy.

Then outline it with Indian ink, rub out the marks of the pencil with Indian rubber, and shade it at pleasure.

Of Imitation of Life.

Let the person you draw after be of a proportionable size, and well-shaped; place him in the easiest and most natural attitude; then with your charcoal sketch faintly the head, or any of the

limbs, separately; which having carefully done, proceed to finish with your pencil.

When you have sufficiently practised the several parts or limbs, you may draw the whole figure, in whatever attitude you may think proper to place it; beginning with the easiest, and proceeding by degrees to the more difficult postures, as time and experience shall enable you.

Be sure to finish your outlines so correctly (marking all the muscles as they occur) that, even before you give it any shadow, it may have some resemblance of the person.

The true proportion which one part of a human figure bears to another, will be seen in the figure you draw from; which may serve as a standard, to examine your drawing by, except where the figure is to be fore-shortened, in which case nature will be the best guide.

In drawing of a likeness, care must be taken to express the passions in the most lively manner, which is to be done by observing the peculiar cast and disposition of every feature, with the exactest nicety; and as this is, of all the parts of drawing, by far the most difficult, it will require more than ordinary attention, and should be last attempted.

Of Drapery.

Drapery is the art of clothing your figures with elegance and propriety.

When your naked figure is outlined, first draw the outlines of the drapery lightly, then the greater folds, and afterwards the lesser; observing never to let them cross each other.

Particular regard is to be had to the quality of the drapery; as the folds of stuff or woollen cloth are more abrupt and harsh, and those of silk more flowing and easy. Linen, cambric, gauze, &c. as their substance is lighter than either, require a still greater delicacy in expressing the waving of the folds, by the faintness of their shadows.

The drapery should not stick too close to the body, but must seem to flow round as it were; yet in such a manner, as that the motion of the figure may be free and easy. A great lightness and motion of the drapery should only be used when the figures are supposed to be in much agitation, or exposed to the wind; but in a calm place, and free from violent action, their drapery should be large and flowing, in order to give them a more graceful appearance.

Let the loose part of the drapery, blown by the wind, all flow one way; and draw that part which lies closest to the body, before you draw those which fly off.

Suit your garments to the body, and make them bend with it; the closer the garment sticks to the body, the narrower and

smaller must be the folds; and if it sits quite close, there will be no folds at all, but must only have a faint shadow, to represent the part of the body which lies under it.

By observing diligently in what manner the drapery flows upon any person standing or sitting before you for that purpose, you will see in what manner to dispose your folds and shadows, according to the unerring rule of nature.

Of Landscape.

Landscape represents the face of the country as it appears to our view, with all the various objects analogous thereto; as towns, castles, churches, houses, trees, hills, cattle, rivers, rocks, &c.

Be careful to augment or lessen every object, according to its distance, making the most remote objects fainter and less distinct, as they appear to the eye, and enlarging them proportionably as they draw nearer.

Shew the sky cloudy or clear, as occasion requires; and if you introduce the sun, let it be rising or setting; either of which representations will give an additional grace to your picture, as they represent nature in its liveliest and most agreeable appearance.

Adapt every part of your landscape to the season of the year, and the time of the day you intend it to represent; and dispose your lights and shades with consistent propriety.

Lastly, we would recommend it to practitioners in this noble art, to rise early in a fine morning, that they may have a better idea of the harmony and beauty of the works of the great Creator; which would wonderfully replenish their minds as to colour and effect.

Of Light and Shade.

The true distribution of light and shade in a picture is absolutely necessary to be known; as it not only determines the proper distance of one object from another, (without which the whole would be an undistinguishable mass of confusion,) but it gives likeness to each respective object, its substance, roundness, and effect.

Shadowing is performed with the pen or pencil; in either of which great judgment is required.

Having made your outlines correct, the first thing is, to observe from which side of the original the light comes in; which, if natural, is either from the right hand or the left; for whenever the light appears in the middle of the picture, and seems to glare more than ordinary, it is caused by a candle, a lamp, or some other luminous body, which is called an artificial light.

Lay on your little tincts first, disposing them as you see they are done in the original; and then proceed to the deeper ones, till you

come to the darkest parts of all; for you may at any time darken your shadows, when you cannot lighten them.

Let all your shadows in the same place fall on the same side; that is, if the right side of a man's face be dark, so must the right side of his body, arm, leg, thigh, &c. But if the light side be darkened by the opposition of some other body intercepting the light, it must receive a contrary shadow.

Make your shadows fainter as they grow towards the light, breaking them gradually, that they may not appear too sudden or harsh.

If you shade with black-lead, or with crayons, you may blend your shadows, and soften them one into another, as you require, with a stump made of paper or glove-leather rolled and tied hard, and cut almost to the point, with which you may also weaken your shades where they are too strong.

When part of the body projects over or before another, the part projecting must receive a stronger light: those parts that bend inward must be made so much the darker, and shadowed deepest next the light.

Two equal lights must never be made in the same picture: the strongest light should fall on the middle of the piece, (where the principal figures ought to stand,) diminishing gradually towards the extremities.

By frequently examining into nature, you will have an opportunity of improving your ideas of light and shade, and will be enabled to form a proper judgment of the effects which the different rays or degrees of light will produce in a picture; for which reason, you should never let slip an opportunity of remarking the various appearances you meet with.

Of History.

History is a narration of several transactions, actions, or events, of a state, king, or private person, delivered in the order in which they happened.

This branch of drawing presents to our view things past, present, and future.

An historical picture must describe the transactions represented, in a manner so clear and conspicuous, as to convey an idea of it to our minds, as fully as could be done by a verbal description; and care must be taken to preserve such analogy or connection between the figures, that not one may seem to be introduced but for some end or purpose. And as in dramatic writing it is essential to make every person speak consistently with the part he represents, so here it will be equally necessary to observe the same propriety of character, and make every figure look the sentiment it is intended to express.

OF PERSPECTIVE.

PERSPECTIVE is the art of delineating objects, (as they appear in nature upon a plain surface,) according to their distance and height perpendicular to the horizon, between the object and the eye.

This art is of great consequence to those who would excel in drawing, etching, engraving, carving in bas-relief, or painting; for being well understood, the artist will be enabled to know when to adhere to the strictest rules, and when to depart from them with propriety.

Explanation of the Terms used in Perspective.

1. Base or fundamental line, is the bottom line of the drawing, on which the person is supposed to stand, with his face towards the point of sight.

2. Perpendicular, is a line drawn upright with respect to any part of the base.

3. Parallel lines, are lines equidistant from each other, as the horizon to the base.

4. Horizon, is the most distant part of a plain, where the clouds, seeming to touch the earth, limit the sight. The horizontal line gives the height of the eye; for we cannot see any thing above the horizon which does not exceed this height. Yet the summit of a mountain may be above the horizon, though its foot be far beneath it.

5. Point of sight, is that part of the horizontal line where all the visual rays centre in a point.

6. Visual rays, are beams of light conveying the likeness of any object to the eye or sight, and the knowledge thereof to the mind or understanding.

7. Points of distance, are supposed points set off on the horizontal line, at equal distances on each side the point of sight.

8. Diagonal lines, are those drawn from the points of distance to the extremities of the base line.

9. Abridgment of the square, is the line where the diagonals intersect or cross the visual rays, and must always run parallel to the base. It is only made where the sight is limited by a perpendicular, as the farther end of a church, hall, room, &c. And supposing a person to stand thereon, a parallel line drawn through the point of sight will seem to pass through the eyes, and will consequently shew what height that person ought to be.

10. Point of direct view. This is nothing more than the front view of a house, church, &c. or, in other words, a geometrical elevation raised from a plan or ground plot, and comprehending an equal space on both sides of the point of sight.

11. Point of oblique view, is when we see the object sideways or aslant. Example: Suppose a person was to draw a view of a canal, with some remarkable building he is desirous to shew more distinct, he must place himself (on the base or fundamental line) opposite to that building, that the rays of light may be more oblique; by which means the admired building will be less foreshortened, and appear to greater advantage, the points of sight being still before him, though not in the middle of the picture.

12. Accidental points, are those where objects end in the horizontal line, but neither in the points of sight or distance, and serve for streets, houses, chairs, roads, &c. which take different directions. As for example: Suppose a street leading to the point of sight, and from it two others branch, the one on the right hand, the other on the left, and take a different direction; these two last streets make what we call accidental points, terminating in some part of the horizontal line, on each side of the point of sight. The same is to be observed in a grove, park, &c. where the walk you are in directs immediately to the point of sight, and the avenues branching out on either side terminate also in different parts of the horizon.

Ichnography, is the plan or ground-plot of any object that is to be raised in perspective.

Scenography, is the art of bringing any thing raised in perspective, from an ichnographic plan to its due proportion, according to the distance in which it is placed; that all objects may be diminished according to their distance in a picture, in the same degree as they are diminished by distance in a natural prospect. A scenographic view may be either direct or oblique.

OF ETCHING.

Etching is a method of working on copper, wherein the lines or strokes, instead of being cut with a graver, are eaten with aquafortis.

This art being executed with greater ease and freedom than engraving, represents curious subjects better, and more agreeably to nature, as landscapes, ruins, and small, faint, or remote objects, buildings, &c.

The principal materials for this art are, the plate, hard and soft ground, (the first for winter, and the other for summer,) a dabber, turpentine, varnish, lamp black, soft wax, and aquafortis.

The tools are, an oil rubber, a burnisher, a scraper, a hand-vice, etching-boards, etching-needles, an oil-stone, and a parallel ruler.

The plate may be had of any size, and well polished, fit for use, of the coppersmiths.

Directions for Laying the Ground.

Having provided yourself with a plate of the size of the print or drawing you intend to copy, rub it well with an oil rubber made of swanskin flannel, till all the marks of the charcoal used in polishing it entirely disappear; then, wiping off the dirty oil with a linen rag, dip your finger in some clean oil, and touch it over every part of the plate; after which, with your burnisher, polish the plate till you can see your face in it; and in case any sand-hole flaws appear, the scraper will assist you in taking them out. The marks left by the scraper are to be taken out by the burnisher, till nothing appear. Having fixed your hand-vice at one end of the plate, with a rag and whiting clear the plate carefully from grease: then heat it over a charcoal fire, or lighted paper, till it will melt the ground, which is to be laid on thinly, and dabbed all over with the dabber, till it is perfectly smooth and even; then warm the plate again, and holding it up with the ground downwards, smoke it all over with a large candle, taking care that the snuff of it do not touch the ground, and waving the candle continually over every part, so that the ground may not be burnt by heating it more in one place than another. If the plate be large, you may bind four large candles together.

Directions for Tracing.

The first thing to be done, (while the plate is cooling after the ground is laid,) is to rub the back of your print or drawing all over with a bit of rag or cotton, dipt in the scrapings of red chalk, and shake off the loose dust, or wipe it off gently with a clean rag. Place the red side upon the plate, making it fast at each corner with a little bit of soft wax. Lay your etching-board under your hand, to prevent bruising the ground; then with a blunt etching-needle trace lightly the outlines and breadths of the shadows, till the marks of them appear upon the ground, which you must take care not to penetrate by tracing too hard.

As great nicety is required in this part of your work, it will be necessary now and then to lift up one corner of your original, and examine whether every part be traced before you take it off, as it will be extremely difficult to lay it down again in its former position.

Directions for Etching.

Having carefully traced your original, take it off, and lay a silk or linen handkerchief next the plate, and over that your etching-board; then proceed to the etching: for which observe the following directions, which are adapted to every particular branch, as landscapes, shipping, portraits, history, architecture, &c.

Distances in landscapes, or the faint parts of any other picture, are the first to be done; and these are to be worked closer, and with a sharper-pointed needle; the darker parts must be etched wider, and with a blunter needle: but to prevent mistakes, the needles may be marked, according to their different degrees, and the uses for which they are intended. As for the very faintest parts of all, they are to be left for the graver, or dry needle; of which hereafter.

In building, and all architecture in general, use a parallel ruler, till frequent practice enables you to do them well enough without.

The needles may, when necessary, be whetted upon your oil-stone, keeping them turning in your hand, so as to whet them equally all round. The oil-stone will be further useful in whetting the scraper, which is to be rubbed flat upon the stone, and with a steady hand, keeping oil constantly upon the stone.

Of Biting; or Eating in the Work with Aqua-fortis.

First, examine your work carefully, to see that nothing be omitted; and if any scratches appear upon the ground, or mistakes be committed in the etchings, they are to be stopped out, which is done by covering them with a mixture of lamp black and varnish laid on thinly with a hair pencil, which when dry will resist the aqua-fortis. But it will be best to stop out these, as they occur to you in the course of your work: for by this means they will be less liable to escape your notice; and when the varnish is dry, you may etch over it again, if required.

The next thing is to inclose the work with a rim or border of soft green or other coloured wax, about half an inch high, bending the wax in the form of a spout at one corner, to pour off the aqua-fortis; and, that it may not run out at any other part, take care to lay your wax so close to the plate, that no vacancies be left.

Your aqua-fortis must be single; and if too strong, as will be seen in the biting, take it off and mix it with a little water, shaking them together in a bottle; and when, by often using, it becomes too weak, it may be strengthened by mixing it in a bottle with a little double aqua-fortis. The bottle which contains the aqua-fortis should have a large mouth, and a glass stopple.

Let the aqua-fortis lie on the plate a short time, wiping off the bubbles as they arise with a feather, which may remain upon the plate while it is biting; after which take it off, and wash the plate with water, and then let it dry: by scraping off part of the ground from the faintest part of the work, try if it be bit enough; and if not, stop out the part you have tried, with the lamp-black and varnish; and when that is dry, pour on the aqua-fortis again

When the faint parts of your work are bit enough, stop them out, and proceed to bite the stronger parts, stopping them out as occasion requires, till the whole work is sufficiently bit; then warm the plate, and take off the soft wax; after which heat the plate till the ground melts, pour on a little oil, and wipe the whole off with a rag. When the ground is taken off, rub the work well with the oil-rubber, and wipe the plate clean; then proceed to finish it with the graver, according to the following directions.

OF ENGRAVING.

THE tools necessary for engraving are, the oil-rubber, burnisher, scraper, oil-stone, needles, and ruler, already mentioned to be used in etching; also gravers, compasses, and a sand bag.

Gravers are of two sorts, square and lozenge. Three of each sort should be provided. The first is used in cutting the broader strokes, the other for the fainter and more delicate. No graver should exceed the length of five inches and a half, the handle included, except the straight lines.

The sand-bag, or cushion, is used to lay the plate on, for the conveniency of turning it about. The oil-stone must be of the Turkey sort.

Of Whetting and Tempering the Graver.

As great pains are required to whet the graver nicely, particularly the belly of it, care must be taken to lay the two angles of the graver, which are to be held next the plate, flat upon the stone, and rub them steadily till they are polished like a mirror, and till the belly rises gradually above the plate, so as that, when you lay the graver flat upon it, you may just perceive the light under the point; otherwise it will dig into the copper, and it will be impossible to keep a point or execute the work with freedom. In order to this, keep your right arm close to your side, and place the fore-finger of your left hand upon that part of the graver which lies uppermost on the stone. When this is done, in order to whet the face, place the flat part of the handle in the hollow of your hand, with the belly of the graver upwards, upon a moderate slope, and rub the extremity or face upon the stone, till it has an exceeding sharp point, which you may try upon your thumb-nail. The oil-stone, while in use, must never be kept without oil.

When the graver is too hard, as is usually the case when first bought, and may be known by the frequent breaking of the point, the method of tempering the steel is as follows:

Heat a poker red-hot, and hold the graver upon it within half an inch of the point, waving it to and fro till the steel changes to

a light straw-colour, then put the point into oil to cool; or hold the graver close to the flame of a candle, till it be of the colour and cool it in the tallow: but be careful either way not to hold it too long, for then it will be too soft; and in this case the point, which will then turn blue, must be broken off, and whetted afresh, and tempered again, if required. But be not too hasty in tempering: for sometimes a little whetting will bring it to a good condition.

Of Holding the Graver.

Cut off that part of the handle which is upon the same line with the belly or sharp edge of the graver, making that side flat, that it may be no obstruction.

Hold the handle in the hollow of your hand; and extending your fore-finger towards the point, let it rest upon the back of the graver, that you may guide it flat, and parallel with the plate.

Take care that your fingers do not interpose between the plate and the graver, for they will prevent you from carrying the graver level with the plate, and from cutting your strokes so clean as they ought to be.

Directions for Engraving.

Let the table or board you work at be firm and steady: upon which place your sand-bag, with the plate upon it, and holding the graver as above directed, proceed to business in the following manner:

For straight strokes, hold your plate firm upon the sand-bag with your left hand, moving your right hand forwards; leaning lighter where the stroke should be fine, and harder where you would have it broader.

For circular or crooked strokes, hold the graver stedfast, moving your hand or the plate, as you see convenient.

Learn to carry your hand with such a sleight, that you may end your stroke as finely as you began it: and if you have occasion to make one part deeper or blacker than another, do it by degrees; and that you may do it with greater exactness, take care that your strokes be not too close, nor too wide.

In the course of your work, scrape off the barb or roughness which arises, with the belly of your graver; but be careful, in doing this, not to scratch the plate; and that you may see your work properly as you go on, rub it with the oil-rubber, and wipe the plate clean, which will take the glare off the copper, and shew what you have done to the best advantage.

Any mistakes or scratches in the plate may be rubbed out with the burnisher, and the part levelled with the scraper, polishing it again afterwards lightly with the burnisher.

Having thus attained the use of the graver, according to the foregoing rules, you will be able to finish the piece you had etched, by graving up the several parts to the colour of the original, beginning, as in the etching, with the fainter parts, and advancing gradually with the stronger, till the whole is completed.

The dry needle (so called because not used till the ground is taken off the plate) is principally employed in the extreme light parts of water, sky, drapery, architecture, &c.

For your first practice, copy such prints as are openly shaded; the more finished ones being too difficult, till you have gained farther experience.

N. B. To prevent any obstructions from too great a degree of light, we would recommend the use of a sash made of transparent fan-paper, pasted on a frame, and placed sloping at a convenient distance between your work and the light. This will not only preserve the sight, but, when the sun shines, cannot possibly be dispensed with.

OF MEZZOTINTO SCRAPING.

THIS art, which is of late date, is recommended to the practice of the ingenious reader, for the amazing ease with which it is executed, especially by those who have any notion of drawing.

Mezzotinto prints, are those which have no etching or strokes of the graver, but whose lights and shades are blended together, and appear like a drawing of Indian ink.

The materials used in this art are,

The copper-plate, oil-stone, grounding tools, scrapers, burnisher, and needles.

Directions for laying the Mezzotinto Ground.

Mark off, upon the bottom of the plate, the distance you intend to leave for the writing, coat of arms, &c. then laying your plate, with a piece of swanskin flannel under it, upon your table, hold the grounding-tool in your hand perpendicularly, lean upon it moderately hard, continually waving your hand in a right line from end to end, till you have wholly covered the plate in one direction: next cross the strokes from side to side, afterwards from corner to corner, working the tool each time all over the plate, in every direction, almost like the points of a compass; taking all possible care not to let the tool cut (in one direction) twice in a place. This done, the plate will be full, or, in other

words, all over rough alike, and would, if it were printed, appear completely black.

Having laid the ground, take the scrapings of black chalk, and with a piece of rag rub it over the plate: or you may, with two or three candles, smoke it, as before directed for etching.

Now, take your print or drawing, and having rubbed the back with red chalk dust, mixed with white lake, proceed to trace it, as before directed.

Directions for Whetting the Grounding Tool.

If a tooth of the tool should break, it may be perceived in the working by a particular streak or gap, which will appear in the ground in a straight line; in which case the tool must be whetted on the back, holding it sloping, and in a circular manner, like the bottom of the tool.

Directions for Scraping the Picture.

Take a blunt needle, and mark the outlines only; then with a scraper scrape off the lights in every part of the plate, as clean and as smooth as possible, in proportion to the strength of the lights in your picture, taking care not to hurt your outlines; and that you may the better see what you do, with the thumb and fore-finger of the left hand hold a piece of transparent paper, sloping, just over your right hand, and you will soon be a judge of the different tincts of the work you are doing; scraping off more or less of the ground, as the different strengths of light and tincts require.

The use of the burnisher is, to soften or rub down the extreme light parts after the scraper is done with, such as the tip of the nose, forehead, linen, &c. which might otherwise, when proved, rather appear misty than clear.

Another method used by mezzotinto-scrapers, is to etch the outlines of the original, as also the folds in drapery, marking the breadth of the shadow by dots, which having bit of a proper colour with aqua-fortis, according to the directions before given, take off the ground used in etching, and, having laid the mezzotinto ground, proceed to scrape the picture as above.

Four or five days before you think the plate will be ready for proving, notice must be given to the rolling press printer to wet some French paper; as no other will do for this work, and as that time is necessary for it to lie in wet. When the proof is dry touch it with white chalk, where it should be lighter; and with black chalk, where it should be darker: and when the print is re-touched, proceed as before for the lights; and for the shades use a small grounding tool, as much as you judge necessary to bring it to the proper colour; and when you have done as much

as you think expedient, prove it again, and so proceed to prove and touch, till it is entirely to your mind. When the plate tarnishes in the part where you are at work, a little vinegar and salt, kept by you in a phial, will take it off, wiping it dry with a clean rag.

Avoid, as much as possible, over-scraping any part, before the first proving, as by this caution the work will appear more elegant.

PAINTING.

OF PAINTING UPON GLASS.

PAINTING upon glass is an art which has generally appeared difficult; yet there is no representation can be more elegant than that of a picture done well in this manner: for it gives all the softness that can be desired in a picture, and is easy to work, as there are no outlines to draw, nor any shade to make, but the colours are put on without the trouble of either.

The pictures are those done in mezzotinto; for their shades being rubbed down on the glass, the several lines which represent the shady part of any common print, are by this means blended together, and appear as soft and united as in a drawing of Indian ink.

Provide such mezzotintos as you like: cut off the margin; then get a piece of fine crown glass, the size of your print, (as flat and free from knots or scratches as possible,) clean the glass, and lay some Venice turpentine, quite thin and smooth, on one side thereof, with a brush of hog's hair. Lay the print flat in water, and let it it remain on the surface till it sinks: it is then enough: take it carefully out, and dab it between some papers, that no water may be seen, yet so as to be damp.

Next lay the damp print, with its face uppermost, upon a flat table; then holding the glass over it, without touching the turpentine till it be exactly even with the print, let it fall gently on. Press the glass down carefully with your fingers in several parts, so that the turpentine may stick to the print; after which take it up: then, holding the glass towards you, press the print with your fingers, from the centre towards the edges, till there be no blisters remaining.

When this is done, wet the back of your print with a sponge, till the paper will rub off with your fingers; then rub it gently, and the white paper will roll off, leaving the impression only upon the glass; then let it dry, and with a camel's hair pencil, dipt in oil of turpentine, wet it all over, and it will be perfectly transparent, and fit for painting.

Colours proper for painting upon Glass.

The several sorts of colours ground in oil for this purpose, and tied up in bladders, may be had at all the capital colour-shops, in town or country.

Whites.—Flake white, podium.

Blacks.—Lamp black, ivory black.

Browns.—Spanish brown, umber.

Reds.—Rose pink, vermilion, red lead; Indian red, lake cinnabar.

Yellows.—English pink, masticot, English oker, spruce oker, Dutch pink, orpiment.

Blues.—Blue bice, Prussian blue, Sanuder's blue, smalt.

Greens.—Verdegrise, terra vert, verditer.

The ultramarine (for blue) and the carmine (for red) are rather to be bought in powders, as in that case they are less apt to dry, or be lost; and as the least touch of these will give the picture a cast, mix up what you want for present use with a drop or two of nut-oil upon your pallet, with your pallet-knife.

The pallets and knives may be had at most of the colour-shops and ivory-turners.

To get the colour out of the bladders, prick a hole at the bottom of each, and press it till you have enough upon your pallet for present use; because the colours are apt to dry and skin over.

Then lay a sheet of white paper upon the table, and taking the picture in your left hand, with the turpentine side next you, hold it sloping, (the bottom resting on the white paper) and all the outlines and tincts of the print will be seen on the glass; and nothing remains but to lay on the colours proper for the different parts, as follow:

The Method of using the Colours.

As the lights and shades of your picture open, lay the lighter colours first on the lighter parts of your print, and the darker over the shaded parts; and having once laid on the brighter colours, it is not material if the darker sorts are laid a little over them; for the first colour will hide those laid on afterwards.

Reds.—Lay on the first red lead, and shade with lake or carmine.

Yellows.—The lightest yellow laid on first may be shaded with Dutch pink.

Blues.—Blue bice, or ultramarine, used for the lights, may be shaded with indigo.

Greens.—Lay on verdegrise first, and then a mixture of that and Dutch pink. This green may be heightened by an addition of Dutch pink.

When any of these colours are too strong, they may be lightened to any degree, by mixing white with them upon your pallet; or you may darken them as much as you please, by mixing them with a deeper shade of the same colour.

The colours must not be laid on too thick; but if troublesome, thin them, before you use them, with a little turpentine oil.

Take care to have a pencil for each colour; and never use that which you have used for green, or for any other colour, without washing it first well with turpentine oil, as that colour is apt to appear predominant when the colours are dry.

Wash all the pencils, after using, in turpentine oil.

Your glass, when painted, must stand two or three days free from dust, before it be framed.

OF PAINTING IN CRAYONS.

CRAYONS are to be had in boxes, every colour partitioned off separately, to prevent their mixing.

The best are those of Switzerland.

The different colours are white, black, yellow, orange, red, purple, blue, green, and brown; and each of these have their several shades, excepting the two first.

Directions for using them.

The paper to be used on this occasion, is rough Venice paper of a white brown colour, and the stiffer the better. That sort called cap-paper is found to be the best, because upon that the colours best distribute themselves. By this method, figures may be drawn in their proper colours as they appear to the eye, because the colours may be matched with the crayons, and the crayons being dry will not alter their colour; but the colours, when wet, appear deeper than when dry, which is apt to deceive a young beginner.

Another way to make the necessary preparations, is to take some of the thickest and smoothest light blue or other paper, and get a straining-frame from a frame-maker's or carpenter's, on which strain some coarse Scotch or Irish cloth, drawing and fastening it with small tacks round the edges, till it be quite smooth; after which, with a sponge and fair water, gently wet the blue paper, and then with a brush or rag paste the paper all over, and lay it carefully on the cloth, exactly even with the straining-frame; after which take it up, and laying white paper on the table, place the blue paper downwards, with one hand keeping the straining-frame steady, and with the other keep the cloth close

to the paper; do this very carefully, and taking it up lay it on the table with the blue paper upwards, and a piece of paper under your hand, and rub it close to the straining frame, without touching any other part, then let it stand to dry; after which place it on an easel, which may be had at the colour-shops, and proceed as follows:

Make the first sketch or rough draught with charcoal; then, with black, white, or red chalk, correct what you see amiss. The outline being thus completed, rub in your crayons according to their proper colours, and then with your finger or fitch soften and blend them together.

OF PAINTING IN WATER COLOURS.

The materials necessary for this art, are, gum, colours, hair pencils, fitches, a pallet, and penknife.

The colours in general are, white, black, brown, red, yellow, blue, and green.

The several species of each are as follow:

Whites.—Flake white, Spanish white, white lead.

Blacks.—Burnt cherry-stones, ivory black, lamp black.

Browns.—Spanish brown, Spanish liquorice, umber.

Reds.—Burnt oker, carmine, cinnabar lake, Indian lake, Indian red, red ink, red lead, vermilion.

Yellows.—English oker, gall-stone, gamboge, masticot (dark and light,) oker de luce, orpiment, pink yellow (dark and light,) Roman oker, saffron.

Blues.—Blue bice, blue verditer, indigo, smalt, ultramarine.

Greens.—Green bice, green pink, sap green, verdegrise, verditer.

Most of the colours may be had, ready prepared in shells, and in powders, as also the hair pencils, at the colour shops. If you use the latter, a grindstone and muller must be provided, which are to be of pebble, and may be had at any stone-cutter's.

Directions for making the following Mixed Colours.

Ash Colour.—White and lamp black; or indigo and black; or cherry-stone and white, shaded with ivory black.

Bay Colour.—Vermilion, with a little Spanish brown and black.

Bright Red.—Indian lake, and native cinnabar.

Carnation.—Lake and white, shaded with lake.

Changeable Silk.—Red lead, and water of masticot, shaded with sap green.

Cloud Colour.—White, light masticot, or lake and white shaded with blue verditer alone.

Flame Colour.—Vermilion and orpiment, or red lead and masticot heightened with white.

Flesh Colour.—White, with a little lake and red lead; and yellow oker for a swarthy complexion.

French Green.—Light pink and Dutch bice, shaded with green pink.

Glass Gray.—Ceruse, with a little blue of any kind.

Hair Colour.—Masticot, umber, yellow oker, ceruce, oker de luce, and cherry-stone black.

Lead Colour.—Indigo and white.

Light Blue.—Blue bice, heightened with ceruse or spodium.

Light Green.—Pink and smalt, with white if need require.

Lion Tawny.—Red lead and masticot, shaded with umber.

Murray.—Cinnabar lake, and white lead.

Orange.—Red lead and a little fine masticot, shaded with gall-stone and lake.

Orange Tawny.—Cinnabar, light pink, and a little masticot, shaded with gall-stone and lake.

Pearl Colour.—Carmine, with a little white, shaded with lake.

Popinjay Green.—Green and masticot; or pink and a little indigo shaded with indigo.

Purple.—Indigo, Spanish brown, and white; or blue bice, with red and white lead; or blue bice and lake.

Russet.—Cherry-stone black and white.

Scarlet.—Red lead and lake, with or without vermilion; or carmine and Indian lake; or native cinnabar and red lead, shaded with Indian lake.

Sea Green.—Bice, pink and white, shaded with green pink.

Sky Colour.—Light masticot and white, for the lowest and lightest parts; red ink and white for the next; blue bice and white for a third degree; and blue bice alone for the highest part of all. These are to be all softened into one another at the edges, so as not to appear harsh.

Sky colour of Drapery.—Blue bice, and Venice ceruse; or ultramarine and white shaded with indigo.

Straw Colour.—Yellow masticot, and a very little cinnabar, shaded with a dark pink.

Violet Colour.—Indigo, white and cinnabar lake; or fine Dutch bice and lake, shaded with indigo; or litmouse, smalt, and blue bice; the latter most predominant.

Water.—Blue and white, shaded with blue, and heightened with white.

Directions for using the Colours.

Your pencils must be fast in the quills, and sharp-pointed after you have drawn them through your mouth.

Before you begin, have all your colours ready before you, and a pallet for the conveniency of mixing them; paper to lay under your hand, and to keep your work clean, as well as to try your colours upon; also a large brush, called a fitch, to wipe off the dust when your colours are dry.

Lay your colours on but thinly at first, deepening and mellowing them by degrees as you see occasion. The quicker you lay them on, the evener and clearer your drawing will appear.

Take care to preserve all your colours from dust; and before you use them, wipe your shells and pallet every time with a fitch.

When you have done your work, or would lay it aside, be careful to wash out your pencils in warm water, or they will get hard, and be unfit for use.

For face-painting, mix up a little carnation or flesh-colour with gum-water in a shell by itself. If it be for a fair complexion, mix vermilion and white flake together; and for a swarthy one, a little masticot, or English oker, or both.

Let your flesh colour be always lighter than the complexion you would paint; for, by working on it, you may bring it to its true colour.

In a large shell, or upon your pallet, lay your different shades of flesh-colour, at a convenient distance from each other; and always have ready a sufficient quantity of white, to lighten your shades.

For the cheeks and lips, use a mixture of lake and red lead, or carmine, as occasion requires; and for blue tincts (as under the eyes and in veins) indigo, or ultramarine and white.

For gray faint shadows, use white, English oker, sometimes masticot; for deep shadows, white, English oker, umber; and for darker shadows, lake and pink, which makes a good flesh-colour.

In colouring landscapes, at first only lay dead colours all over the piece, leaving no part uncovered: and be not over-curious in this part of the performance, but rather use a masterly freedom; and the work, though seemingly rough to the eye, will have a good effect when placed at a distance.

Let not the roughness of the colour discourage you; for it is easy to be softened by degrees with the other shadows, observing only to sweeten and heighten them according as the light falls.

In some places lay on strong touches, and in those places bring your work up together to an equal roundness and strength; tempering and sweetening your colours with a sharper pencil than the first, that no lumps or harsh ridges be left, but that all your shadows may be dispersed, soft and smooth, gliding gently, as it were, into one another.

You are not to finish any part before the other, but work up

all the parts gradually alike, till you see nothing wanting to complete your picture.

Having laid your dead colours, begin first with the lightest parts, as the sky, sun-beams, &c. then the yellowish beams, which are to be done with masticot and white; next the blueness of the sky, with ultramarine, or smalt alone. For purple clouds, only mix lake and white, making your colours deeper as they go upwards from the horizon, except in tempestuous skies. The tops of distant mountains must be worked so faint, that they may seem to lose themselves in air.

Bring your colours forward as your distance decreases; painting your first ground next the horizon downwards of a blueish sea-green, and, as you advance forward, of a reddish or darker green, till you come to the foreground itself, which, as it is to be the darkest part of all, do with a dark green, shaded with a dark brown or yellow; which rule of shadow will also serve for the trees on each respective ground.

All distant objects are to be made imperfect as they appear to the eye, as has been already observed under the article of *light* and *shade*.

In colouring trees, boughs, and branches, touch in all the darker shades first, raising the lighter leaves above the darker, by adding masticot to the dark green, which may be made with bice, pink, and indigo, for the uppermost of all, which are to be done last: touch lightly the extremities of the leaves with a little green masticot and white, and set off the darkest shadows with sap-green and indigo.

These rules are adapted to general appearances, but the learner may deviate from them as nature shall dictate.

With regard to drapery, fruits, flowers, and other branches of painting, the best observations are to be taken from the objects themselves, or the most curious and exact representations of them.

RECEIPTS

FOR THOSE WHO PAINT IN WATER COLOURS.

To make Gum Water.

DISSOLVE one ounce of pure white gum-arabic, and half an ounce of double-refined sugar, in a quart of spring-water; strain it through a fine sieve, or piece of muslin, and bottle it off for use, keeping it free from dust.

Another Way.

Take some gum-arabic of the whitest sort, bruise it, and tie it up in a piece of woollen cloth, and steep it in spring-water in a glass or earthen vessel, till the whole be dissolved. If it be too stiff, add more water; and if too thin, more gum.

With this water you may temper most of your colours; using such a quantity, that being touched when dry, the colour will not come off. If the colour shine, there is too much gum in it.

To keep the Flies from your Work.

When you have made your gum-water according to either of the foregoing directions, add thereto a little coloquintida; which will preserve your work, when exposed, from being spoiled by the flies.

To make Liquid Gold for Vellum Painting, Fans, &c.

Grind the finest leaf-gold with strong gum-water very fine, adding as you grind it more gum-water, as you see it necessary. When you have ground it as fine as you can, wash it in a large shell; then temper it with a little mercury sublimate, bind it in the shell with a little dissolved gum, shake and spread it equally all over the shell, and use it with fair water only.

To make Liquid Silver for the same Purpose.

The process for this is the same with that of liquid gold, only observe in using it, to temper it with glare of eggs, instead of water.

To make the Glare of Eggs.

Take the whites, and beat them with a spoon till they all rise in a foam; let them stand all night, and they will be clarified into good glare.

To recover Liquid Silver that has contracted Rust.

If your silver, by length of time or bad weather, become rusty, cover that part of your work with juice of garlic; which will effectually recover it.

To keep the Colours from Sinking.

Boil four ounces of roche-allum in a pint of spring-water, till it is thoroughly dissolved; then filter it through brown paper, and keep it for use. Before you lay on your colours, take a sponge, and wet the back of your paper with this water while it is hot. This will not only prevent the colours from sinking, but will also

give them an additional beauty and lustre, and preserve them from fading. If your paper is not good, it must be washed three or four times with this water, drying it every time. If your prints are to be varnished, wash them all over with white starch before you begin to lay on your colours.

To make Size for painting Scenes and other Candle-light Pieces.

Steep a quarter of a pound of the cuttings of white glove leather in water for some time; then take them out, and boil them in three quarts of water till it wastes to a pint, and strain it through a cloth into an earthen pan. When the size is cold, if it feel firm under your hand, it is strong enough. You may prepare any colours in this size while it is warm, and it will take off the glare which would appear upon them by candle-light if mixed with gum-water.

To recover Colours when decayed.

Take rosemary-water, double-distilled, or pure spirit of rosemary, and with a few drops of it temper your colours, which, however dead and faded, will recover their bloom and brilliancy.

This water or spirit will prevent the bubbles in white and umber, which is troublesome in grinding.

Pink. The single pink does not admit of so great a variety as the carnation; but is nevertheless so variegated as to make it an agreeable flower for sattins, silks, &c. The most common are either white or crimson; others are striped white and red; others are white, spotted with red; others edged with red; all which may be worked according to the rules for the other flowers so diversified with the same colours. The leaves and stalks are bluish green; only at the joints there is for the most part a yellowish tinge, which is also at the bottom of the cup and scales.

PAINTING ON SILKS, SATINS, &c.

When the outline is made according to the artist's fancy, a wash of isinglass should with care be laid on, to take away the glare and sleekness of the sattin, otherwise the colours will not work freely: the isinglass to be melted in very clear water, over the fire, so as not to be very glutinous; otherwise it will discolour the sattin, and consequently spoil the colours.

In the foregoing rules we have recommended, for the most part, the leaving the paper for the light parts of a flower, and working with colours mostly transparent: but here the lights are to be made by a small tincture of the colour of the intended flower mixed with the flake-white, so much as just to make a

degree from the colour of the sattin; if white, or of any other colour, to be mixed proportionably to the colour of the flower: for instance, if a blue flower, the bice or verditer, a very small quantity of it with the white, using less of it proportionally as the shades grow darker; and in the most dark, indigo alone may be used, it being by that time rendered opaque enough; but great care must be used not to lay the colours on too thick, otherwise they will crack: a little sugar-candy will be found necessary, when mixed with gum-water, as a preventative to that inconveniency. If a flower happens to be of so deep a colour as not to admit of any pure white in the lightest of the parts, a sort of priming of white should be laid on; after which, when dry, begin with the ground colour of the flower, proceeding gradually with the shades, as in the above directions, which, with the selected examples we have annexed, peculiarly chosen from nature for the purpose, we hope will be sufficient for our ingenious students in this most delightful amusement.

OF COLOURING MAPS AND OTHER PRINTS, IN WATER COLOURS.

HAVING, as yet, seen nothing published upon this subject that is authentic, we have thought fit, for the sake of those who are inclined to ingenuity, to set forth the way and manner of doing this work, it being an excellent recreation for the gentry, and others who delight in the knowledge of maps: which, by being coloured, and the several divisions distinguished one from the other, by colours of different kinds, do give a better idea of the countries they describe, than they can possibly do uncoloured.

Now, to perform this work after the best manner, there must be provided in the first place a ley, made with tartar and gum-water.

To make the tartar-ley, do thus: Take two ounces of the best white tartar, which is a stony substance that sticks to the side of wine vessels, and is sold by the druggists. Wrap it up hard and tight in half a sheet of cap-paper, wet it thoroughly in water, and put it into a clear fire, either of wood or sea-coal; let it remain therein till it be red-hot quite through; then take it out with a pair of tongs, and put it immediately into a pint of water, and with your finger rub it well to pieces; put it into a long narrow glass, and in a day or two the black will all settle, and the ley will become pure and clear: pour off the ley into a clean glass, and keep it close stopped for use.

To make gum-water: Take three ounces of the best and clearest gum-arabic, which is sold at the druggists, and beat it as small as you can bruise it; then put it into a pint of fair spring water, and let it dissolve therein, which will be much hastened by shaking the bottle two or three times a day very well, that the gum that is dissolved may mix the better with the water that is above it; and when it is all dissolved, if there appear any foulness in it, strain it through a rag into a clean earthen dish, and put it into a glass, and stop it for use. Remember, that too much of this ought not to be made at a time; for if the gum be kept too long dissolved in the water, it will rot, and be of no use: you must therefore always observe to make it fresh once in two months, or three at the farthest.

In the next place, you must prepare or make your colours for use; and the best for this work are those that follow, namely,

Copper green, and that is made thus: Take a pound of right French verdegrise, made at Montpellier, this being the best, for the verdegrise made at any other place will fade; to this add three ounces of cream of tartar; beat them both into a fine powder, and take care, while the verdegrise is in the pounding, to stop your nose, and hold a bunch of fine linen in your mouth to breathe through, else the subtile powder of the verdegrise will be apt to offend: and when this is done, mix both the powders into two quarts of water, and boil it in an earthen pipkin till it boil away a quart, then strain it out when cold, and put the liquor into a glass, stop it up, and let it stand to settle till the liquor be very clear, so you will have a delicate green; but sometimes, the verdegrise not being always of a goodness, the colour may not be deep enough for some uses. In this case put some of it into a broad earthen dish, and set it over a chafing-dish of coals, and by a gentle heat diminish so much of the liquor, till by trying on a paper, and letting it dry, the colour pleases you: and here you are to note, that if it shine too much when dry, it is not right; for it is not rightly made except it just shine: and if you cannot make the colour deep enough by evaporating by heat the abounding liquid, without making it shine too much, it were better to add some more verdegrise, and boil it up again till it become a deep transparent green. If you would make but a pint of this, you must take but half the quantity of each; and you are also to take notice, that this is a colour that will keep many years without decaying, if the glass that contains it be close stopped.

The next colour needful to be made, is a stone colour, or a liquor of myrrh, which is thus done: Take a pint of your tartarley, and add to it one ounce of the best myrrh in powder, which you can get at the druggists, and boil it till the myrrh is dissolved, which will be done in a little time; let it settle, and pour off the clear for use, which you must close stop up: this is also a tincture that will never decay, and may be made fainter or deeper, by

boiling more of the liquor away to make it deeper, or by adding water to make it fainter.

And, in the last place, there is required a crimson colour, which is speedily made thus: Buy at the druggists some good cochineal, about half an ounce will go a great way; take thirty or forty grains, bruise them in a gallipot to a fine powder, then put to them as many drops of the tartar-ley as will just wet it, and make it give forth its colour; and immediately add to it half a spoonful, or more, if the colour be yet too deep, and you will have a delicate purple liquor or tincture. Then take a bit of allum, and with a knife scrape very finely a very little of it into the tincture, and this will take away the purple colour, and make it a delicate crimson. Strain it through a fine cloth into a clean gallipot, and use it as soon as you can, for this is a colour that always looks most noble when soon made use of, as it will decay if it be made too long.

Indigo is another colour used in colouring of maps.

This is bought at the shops that sell paint, and it must be ground very fine on a stone, as you do oil-colours, with a little tartar-ley to make it give its colours, and look the brighter; when it is ground perfectly fine like a syrup, add gum-water to it till it be thin enough for your purpose, and keep it in a glass close stopped up; but it will settle so, that when you use it you must stir it exceedingly well up from the bottom.

For a yellow, gamboge is the best; it is sold at the druggists in lumps, and the way to make it fit for use, is to make a little hole with a knife in a lump, and put some water into the hole, stir it well with a pencil till the water be either a deeper or fainter yellow, as your occasion requires, then pour it into a gallipot, and temper up more, till you have enough for your purpose.

Red-lead is also a colour much used in this work, and so is orpiment; both which you may buy at the colour-shops very well ground, so that they need only to be tempered with gum-water to be fit for use.

Blue-bice is also often used, which needs only to be tempered with gum-water; and when men design to be curious, they may use instead thereof ultramarine, which is the best and most glorious of all blues, yet extremely dear; though small papers of it at about two shillings price, may be bought at some colour-shops, which, if carefully used, will go a great way: it need only be tempered in a very small gallipot, with some gum-water, till it lie on the paper with a fine and almost transparent colour.

There is likewise an exceeding fine red or crimson-colour, named carmine, which is exceeding dear; yet about half a crown's worth will go a great way in the uses to which it is put. It is tempered with gum-water, and gives several degrees of colour, according as it is thick or thin tempered.

Vermilion is also used in some cases. This is an excellent

scarlet, that needs only to be tempered with gum-water; for it may be bought very finely ground to powder, at the colour-shops: only it is to be noted, that this colour shews much brighter when dry, if glazed over with some thick gum-water, which is made by putting two ounces of gum-arabic to half a pint of water, or less.

And for some uses burnt umber, ground very fine with water as thick as possible, and then tempered with gum-water to a due thickness, and then it makes a good transparent colour.

There is another colour needful in this work, which is a most pleasant grass green, and that is made thus: Take a lump of gamboge and make a hole in it, then put therein some copper-green; stir it about with a pencil, and from a willow you will see it turn to a grass-green, which you may make deeper or lighter as you stir it about a longer or a shorter time.

Of the Practice of Colouring Maps.

The colours being prepared as before directed, the only way to colour maps well, is by a pattern done by some good workman, of which the Dutch are esteemed the best; three or four such maps, coloured by a good artist, are sufficient to guide a man in the right doing of his work; but if he cannot obtain this, he may, by a few trials, grow a good artist in a short time; for this is only attained by practice: and if a man spoil half a score maps in order to get the knack of colouring a map well at last, there is no man that is ingenious will grumble at it.

The art of colouring right may be attained by practice, as was said; but the hardest thing is, to know rightly how to make and prepare the colours properly, without suffering them to sink into it; all that are here mentioned will lie fair and pleasant to the eye; and the fairness of the colour is the art of map-painting: but if the paper be not good and strong, no art can make the colours lie well; therefore, in buying maps, choose those that are printed on the thickest and strongest paper.

THE PRACTICE OF WORKING OIL-COLOURS, AND PAINTING TIMBER-WORK,

After the Manner of Common Painting.

THAT which we here call common painting, is only the way and manner of colouring all kinds of wainscot, doors, windows, posts, rails, pales, gates, border-boards for gardens, or any other materials that require either beauty, or preservation from the violence of rain, or injury of weather; the method of doing which we shall lay down in the plainest manner possible.

Suppose, then, that there be a set of pallisadoes, or a pair of gates, or some posts and rails, to paint, and I would finish them in a stone-colour: first look over the work, and take notice whether the joints be open in the gates, or whether there are any large clefts in the posts; for if these are not well secured, the wet will insinuate itself into those defects, and make the quicker dispatch in ruining the whole work; let the first business therefore be, to stop up these places smooth and even, with a putty made of whitening and linseed-oil, well beaten together on the grinding-stone, with a wooden mallet, to the consistence of a very thick dough, and with this let all the crannies, clefts, and other defects, be perfectly filled up, that it may be equal to the surface of the stuff; then proceed to the priming of the work with some Spanish brown, well ground and mixed with very thin linseed-oil; with this do over the work, giving it as much oil as it will drink up; this in about two days will be tolerably dry: then, if you would do this work substantially, do it over again with the same priming-colour; when this is thoroughly dry, then take the white-lead, well ground and tempered up, not too thin, for the stiffer you work it, the better body will be laid on, and the thicker coat of colour that your timber is covered withal, the longer it will last. Let this colour be well rubbed on, and the whole surface of the work be so entirely covered, that there remain no crack nor corner bare, which you may easily perceive by jobbing in the point of a bristle brush; let this first colouring dry, and then go over it a second time, and if you please a third also: the charge will be a little more, but the advantage will be much greater.

This course is sufficient for any kind of timber-work that requires only a plain colour, whether you thus cover the work with a stone-colour, or else with a timber-colour in umber and white, or lead-colour in indigo and white, that of the white being the cheapest of the three by much; nay, I have known some lay over their work only with a coat of Spanish brown, by tempering it up more stiff than was done for the two first primings, which in some respects is cheapest of all, and preserves the timber perhaps as well as any. Now he that is able to bring the work thus far on, has proceeded to the highest pitch of that common painting, that aims at preservation, beyond beauty, though something of beauty is necessarily included in this also; but this is not all—for he that is arrived thus far, is in a fair way to other perfections in the art of painting: but for the pannelling of wainscot, with its proper shadows, and for imitating olive and walnut wood, marble, and such like, these must be obtained by ocular inspection, it being impossible to deliver the manner of the operation by precept without example; and I am bold to affirm, that a man shall gain more knowledge by one day's experience, than by a hundred spent to acquire it some other way.

I advise therefore all those that desire an insight into this business, to be a little curious, if opportunity offers, in observing the manner of a painter's working, not only in grinding his colours, but also in laying them on, and working them in; in all these observing the motion of his hand in managing of any kind of tool, and by this means, with a little imitation, joined to the directions here given, I doubt not but in a short time you may arrive to a great proficiency in the business of common painting.

Note,—That when you have made use of your colours, if there be occasion for a small cessation, till the work be finished; in this case it is best to cover your colours in a pot with water, for that will prevent their drying, even in the hottest time.

And for your pencils, they ought, as soon as you have done working, to be well washed out in clean linseed-oil, and then in warm suds; for if either oil or colours be once dried in the brush or pencil, it is spoiled for ever.

It has been observed, that timber laid over with white, when it has stood a while in the weather, the colour will crack and shrink up together, just as pitch does if laid on any thing that stands in the sun: the cause is, that the colour was not laid on with a stiff body, able to bind itself on firm and fast.

If you shall at any time have occasion to use either brushes or pencils that are very small, as in many cases there will be occasion, you ought then to dispose of the colours you use upon a pallet, which is a wooden instrument, easy to be had at any colour shop, and there work and temper them about with your pencil, that the pencil may carry away the more colour; for you are to note, that if a pencil be only dipped in a pot of colour, it brings out no more than what hangs on the outside, and that will work but a very little way; whereas if you rub the pencil about in the colour on the pallet, a good quantity of colour will be taken up in the body of the pencil; and, besides all this, you may work a pencil better to a point on a pallet, than you can do in a pot; the point of a pencil being of the greatest use in divers cases, especially in drawing of lines, and all kinds of flourishing.

A Catalogue of the several Colours used in Painting with Oil.

Whites.—The principal of all whites is white lead.

Of this colour there are two sorts, the one called ceruse, which is the most pure and clean part; the other is called by the plain name, white lead.

Besides white lead and ceruse, there is another sort to be met with sometimes, which they call flake white.

Blacks.—Lamp black, lamp or candle black, ivory black, willow charcoal.

Reds.—Vermilion is the most delicate of all light reds, being of itself a most perfect scarlet colour.

Lake, especially the richest sort, is the best of all dark reds, being a most pure crimson.

Red lead is the highest of all reds now in use: it is a sandy harsh colour, and such a one as is not easily ground very fine, although you bestow much labour upon it.

Spanish brown is a dark dull red, of a horse-flesh colour; it is an earth, but there is some of it of a very good colour, and pleasant enough to the eye, considering the deepness of its colour; it is of very great use amongst painters, being generally used as the first or priming colour that they lay upon any kind of work, being cheap and plentiful, and a colour that works well, if it be ground fine, as you may do with less labour than some better colours require; the first sort is the deepest colour, and most free from stones; the other sorts are not so good to give a colour to the eye, but yet they serve as well as any other for a priming colour.

Yellows.—Yellow oker is of two sorts; one called plain oker, the other spruce oker: the one is a much lighter colour than the other.

Pink yellow.

Orpiment is that colour which some call yellow arsenic.

Masticot is a good light yellow for most uses, especially in making greens, of which several sorts may be framed out of this colour, being mixed with blue.

Greens.—Verdegrise is the best and most useful green of all others.

Green bice is of a sandy nature, and therefore not so much used.

Green verditer is also a sandy colour: neither of them bear any good body, and are seldom used but in landscapes, where variety is required.

Blues.—Blue bice bears the best body of all bright blues used in common work, but it is the palest colour.

Blue verditer is of no good body, somewhat sandy, and of no very good colour itself, being apt to turn greenish, and being mixed with a yellow makes a very good green.

Indigo is a dark blue, if worked by itself; to remedy which, whites are usually mixed, and then it makes but a very faint blue.

Note,—That the longer this colour is ground, the more beautiful and fair it looks.

Smalt is the most lovely blue of all others.

Note,—That of this colour there are two sorts; the finest is that which is called oil smalt.

Umber is a colour that really has no affinity with the others before mentioned, being neither white, black, red, yellow, blue, or green; yet it is a colour of as great use as any of the rest in common painting.

What Colours are most suitable, and set off best one with another.

By setting off best, we mean their making each other look most pleasant; for two of some particular colours put together, or one next the other, shall add much to the beauty of each other, as blue and gold, red and white, and such like; but green and black put together look not so pleasant, neither do black and umber, or haw-colour, and such like.

All yellows then set off best with blacks, with blues, and with reds.

All blues set off best with whites and yellows.

Greens set off best with blacks and whites.

Whites set off well enough with any colour.

Reds set off best with yellows, whites, and blacks.

Gold looks well enough upon white ground, especially if the matter to be gilt be carved.

Gold and black shew very well.

Gold and timber-colour shew also very well.

So do gold and horse-flesh colour, made with the finest Spanish brown.

But the most excellent ground of all others for gold, are the vermilion red, the smalt blue, and the lake, laid on a light ground.

Of some Colours that arise from Mixture.

Ash-colour is made of white lead and lamp black: if a deep ash-colour, then take more black; if a light one, then take but little black, and most white.

A lead colour is made of indigo and white.

A colour resembling new oaken timber, is made of umber and white lead.

A flesh-colour is compounded of lake, white lead, and a little vermilion.

For a buff-colour, take yellow oker and white lead.

For a willow-green, take verdegrise alone.

For a light willow-green, take verdegrise and white.

For a grass-green, take verdegrise and pink.

A carnation is made of lake and white.

Orange-colour, yellow oker and red lead.

A light timber-colour, mixed spruce oker and white, and a very little umber.

Brick-colour, red lead, a little white, and yellow oker.

For a straw-colour, take white and a little yellow oker.

Olive-wood is imitated with oker and a little white, veined over with burnt umber.

Walnut-tree is imitated with burnt umber and white, veined

over with the same colour alone, and in the deepest places with black.

Pales and posts are sometimes laid over with white, which they call a stone-colour.

Sometimes pales and posts are laid over with indigo and white, which is called a lead-colour.

Window-frames are laid in white, if the building be new, but if not, then they are generally laid in lead-colour, or indigo and white, and the bars with lead.

Doors and gates, if painted in pannels, then the shadows of a white ground are umber and white; but if laid in a lead colour, then the shadows are listed with black.

It is impossible to set down all those varieties of colours that may be produced by mixture. They who would see more, may peruse Dr. Salmon's Polygrafice, where they will find great variety. But those which we have here given an account of, will sufficiently serve for common painting.

DIRECTIONS FOR MIXING OIL-COLOURS,

FOR DIVERS PURPOSES IN THE ART OF COLOURING PRINTS WITH OIL-COLOURS.

Colours for several Faces.

For faces that are accounted fair, take white lead, a little vermilion, and a small touch of lake.

For the lips, take more of the vermilion and lake than you did for the face.

For a brown face, take burnt oker and white.

For tawny-moor, take cullens earth, a little burnt oker, and a little white.

Colours for Hair.

For brown hair, mix umber and a little black and white.

For yellow hair, take stone oker, white lead, and a little vermilion.

For flaxen hair, take white lead, stone oker, and a little cullens earth.

Linen is done with white lead or ceruse.

Silver is done with white, and a little smalt, and some white masticot.

Gold is done with red orpiment and white masticot, of each an equal quantity.

Colours for Garments.

For blue garments, the best smalt and white lead.

For a grass-green, mix verdegrise and a little pink yellow.

For a willow-green, mix verdegrise and a very little white.

A sea-green is made by mixing green verditer, pink, and white lead.

A French-green is made by mixing pink and indigo.

A carnation, by mixing lake and white lead.

A crimson is made by mixing vermilion, lake, and white.

A scarlet is only vermilion laid on alone.

A cherry-colour is made by mixing vermilion and white lead.

For yellow, lay on either yellow orpiment or yellow masticot: if your yellows are more pale, then mix white with the former.

For an orange-colour, mix red orpiment and a little vermilion.

For a purple, mix smalt, lake, and white.

For a violet, mix bice and lake.

A straw-colour is made with white and yellow oker, and a very little umber.

An ash-colour is made by mixing black and white.

A chesnut-colour is made by mixing umber, lake, and white.

A dove-colour, or the wings of an angel, take white, a little lake, and a little smalt.

Colours for Trees.

For bodies of trees, take pink yellow, white lead, yellow oker, and a little black.

For the leaves of them that are near the eye, take verdegrise and pink; or, if dark-coloured, then take indigo and pink.

For leaves of trees farther off, take green verditer, pink, and white lead.

For them that are farthest of all, take terra-verd and white.

Colours for Grounds behind a Picture.

Note, That light hair requires a dark ground, and dark hair a light ground.

Ground colour for a picture with light hair, is made with umber, white, and black.

A ground colour for a picture with dark hair, is made with umber and white.

For Ground in a Landscape.

Take pink, oker, and white, with a little green verditer.

For country houses at a distance, take white lead, yellow oker, and smalt; the same colour serves also for houses of stone.

For brick houses or walls, take yellow oker burnt, and white

lead, if the work is far off; but if near, then Indian red, and a little white.

For pales of wood, or other timber-work, of what kind soever, in country cottages, take umber, white, and a little oker.

Sky-Colours are made of smalt and white for the highest skies, more white for the lower, and yellow mixed with a little vermilion, for the lowest of all.

GILDING.

How to make a Size for Gilding both with Gold and Silver.

THE operation is thus, for the making of gold-size: Take yellow oker, and grind it on a stone with water till it be very fine, and afterwards lay it on a chalk-stone to dry; this is the common way. Or you may wash your oker; for when it is washed, to be sure nothing but the purest of the colour will be used; and, besides, it is done with less daubing.

When your oil and oker are thus prepared, you must grind them together as you would other oil-colours, only with fat drying oil: but it is somewhat more laborious, and must be ground very fine, even as oil itself; for the finer it is, the greater lustre will your gold carry that is laid on it.

Here note, That you must give it such a quantity of your fat oil, that it may not be so weak as to run when you have laid it on, nor so stiff that it may not work well; but of such a competent body, that after it is laid on it may settle itself smooth and glossy, which is a chief property of good size.

Silver size is made by grinding white lead with fat drying oil, some adding a little vedegrise, to make it bind.

To Gild with Gold, or on an Oily Size, either Letters, Figures, &c.

Whatsoever you would gild must first be drawn with gold-size, (the making of which has been mentioned,) according to the true proportion you would have gilt, whether figure, letter, or whatever else it be: when you have thus drawn the true proportion of what you would have gilt, let it remain till it be sufficiently dry to gild upon, (which you shall know by touching it with the end of your finger,) for if your finger stick a little to it, and yet the colour come not off, then it is dry enough; but if the colour come off on your finger, then it is not dry enough, and must be let alone longer; for if you should then lay your gold on, it would so drown it, that it would be worth nothing; but if your size should be too dry, then it will not take the gold, for which there is no remedy but new-sizing; therefore you must watch the true time, that it be not too wet nor too dry; both extremes being not at all convenient.

When your size is ready for gilding, take your book of leaf-gold, and, opening a leaf of it, take it out with your cane plyers, and lay it on your gilding cushion, and if it lie not smooth, blow on it with your breath, which will lay it flat and plain; then with a knife of cane, or, for want of it, an ordinary pocket-knife that hath a smooth sharp edge; with this, (being wiped very dry on your sleeve, that the gold stick not to it,) let your leaf of gold be cut into such pieces or forms as your judgment shall think more suitable to your work.

When you have thus cut your gold into convenient forms, then take your gilding-pallet, (it is a flat piece of wood, about three inches long and an inch broad, upon which is to be glued a piece of fine woollen cloth of the same length and breadth,) and breathe upon it to make it dampish, that the gold may stick to it; with this tool take your gold (by clapping it down on the several pieces you had before cut into forms) and transfer it to your size, upon which clap it down according to discretion; and your gold must afterwards be pressed down smooth with a bunch of cotton, or hare's foot; and this you must do piece by piece till you have covered all your gold size; and after it is fully dried, then with your hare's foot brush off all the loose gold, so will your gilding remain fair and beautiful.

If your work to be gilt be very large, open your book of leaf-gold, and lay your leaf down on your work without cutting it into pieces, and so do leaf by leaf till you have covered quite over what you intend to gild; and if some particular places should miss, take up with a small bunch of cotton a piece of leaf gold, cut to a fit size, and clap it on, that the work may be entirely covered; and if the gold be to be laid in the hollows of carved work, you must take it up on the point of a camel-hair pencil, and convey it in, and with the said pencil dab it down till it lie close and smooth.

How to Gild with Silver.

In laying on silver upon an oily sise, the same method is in all respects required as for gilding with gold, save only in this, that the size upon which silver is laid ought to be compounded of a very little yellow oker, and much white lead; for the size being of a light colour, the silver laid on it will look more natural, and retain its own colour better, the whiter the size is.

Note, That the common painters do now generally, in gilding, use more silver than gold, in most works that are not much exposed to the air; to which they afterwards give the colour of gold by means of the lacker varnish; the use of which is now so common, that if they gild any thing that stands free from the weather they only gild it with silver, and so give it the colour of gold with lacker varnish, made of gum-lac, dissolved in spirit of wine, and laid over it.

MILITARY AND NAVAL AFFAIRS.

OF THE ARMY.

THIS state includes the *soldiery*, or persons appointed for the defence of the realm. In a land of liberty it is dangerous to make a distinct order of the profession of arms. In absolute monarchies it is necessary for the safety of the prince, and arises from the main principle of their constitution, which is that of governing by fear. In free states no man should take up arms but with a view to defend his country and its law. It was not till the reign of Henry VII. that the kings of England had a guard about their persons. The fashion of keeping standing armies was first introduced by Charles VII. in France, 1445, and has since prevailed over Europe: and, for the preservation of the balance of power in Europe, it was thought proper amongst us to maintain, even in time of peace, a standing body of troops, under the command of the crown; but they are considered, *ipso facto*, disbanded every year, unless continued by parliament.

Military discipline, is the training of the soldiers, and the due enforcement of the laws and regulations instituted by authority. This discipline is the soul of all armies; and unless it be established with prudence, and supported with resolution, they would be little better than a rabble, and more dangerous to a state than even its enemies. The event of a battle depends much less at present on the personal strength and prowess of individuals than it did in the days of our forefathers. Discipline improves the courage men have derived from nature, and by inspiring them with a confidence in themselves and in each other, excites an artificial courage where the natural one is deficient. By the force of discipline, men are kept in order and obedience to command in opposition to the strongest impulse of their passions. When troops are said to be routed, nothing more is meant than that they are put in confusion, or that *order* and *subordination* are fled. The best disciplined troops are least likely to be conquered. It has been a general remark, that those regiments that have made the best figure on the parade, have, when taken upon service, distinguished themselves the most against the enemy: and those officers who have, in maturer years, turned out the most able generals, have, when young in the service, been most remarkable for their attention to military discipline.

Of RANK. The appointment of officers, and regular gradation or chain of authority, are necessary steps towards the establishment of this discipline and subordination. One principle is, that

there must be *one supreme and sole in command.* The officers by which an army is commanded, are, the *captain-general,* or commander in chief (field-marshal,) and the other general and staff officers. A lieutenant, or even a major-general, has often in our service the appointment of commander in chief. A proper number of *general officers* are appointed according to the strength of the army. For this proportion no certain rules are established. When an army is considerable, the following is considered as an adequate staff, exclusive of the commander in chief: A general for the horse and one for the foot, or a general for each wing of the army; a major-general for every two brigades; and about half that number of lieutenant-generals. Notwithstanding the distinct appellation of *general, lieutenant-general,* and *brigadier-general,* their duties are much the same. Those terms serve little purpose but to denote the successive gradations of rank.

At a siege a general officer is appointed to the command of each attack. On the day of march each column of the army has its own general officer to lead and command it. Besides the general officers and their aid-de-camps, there are other officers upon the staff, who are properly called staff-officers of the army. Of these the principal are the *adjutant,* and quarter-master-general.

General officers, therefore, are those who do not only command over a single company, or regiment; but whose office and authority extends over a body of several regiments of horse and foot.

GENERALISSIMO, called also *captain-general,* and simply the general, is an officer who commands all the military powers of a nation, who gives orders to all the general officers, and receives no orders himself but from the king.

COLONELS are commanders in chief of a *regiment,* whether horse, foot, or dragoons. A colonel may lay an officer of his regiment in arrest, but must acquaint the general with it. A *colonel-lieutenant,* is he who commands a regiment of guards, whereof the king, prince, or some other person of eminence, is colonel.

These colonel-lieutenants have always a colonel's commission, and are usually general officers. A *lieutenant-colonel,* is the second officer in a regiment: he is at the head of the captains, and commands in the absence of the colonels.

MAJOR-GENERAL, is a general officer, who receives the general's orders, and delivers them out to the majors of brigades, with whom he concerts what troops are to mount guard, what to form detachments, to go on parties, or to be sent on convoys.

It is his business to view the ground to encamp on, and do various other services: he is subordinate to the general, and lieutenant-general, and the *next* command ng officer to them.

Major of a regiment, is an officer whose business is to convey all orders to the regiment, to draw it up and exercise it; to see it

march in good order, to look to its quarters, and to rally it if it happen to be broken in an engagement.

The Major is the only officer of a regiment of foot, who is allowed to be on horseback in time of service: but he rides, that he may have speedy communication from place to place, as occasion serves.

A Major of a regiment of horse, is the first captain of a regiment; and commands in the absence of the colonel.

BRIGADIER, is the general officer who has the command of a brigade. The eldest colonels are generally advanced to this post. He that is upon duty is brigadier of the day. They march at the head of their own brigades, and are allowed a serjeant and ten men of their own brigade for their guard. But the rank of brigadier-general in the British service is now abolished.

Brigadiers, or *sub-brigadiers*, are posts in the horse-guards.

CAPTAINS. There are several kinds of these military officers. A *captain-general* is he that commands in chief; and has been already noticed. *Captain of a troop* or *company*, is an inferior officer, who commands a troop of horse, or company of foot, under a colonel. The duty of this officer is to be careful to keep his company full of able-bodied soldiers; to visit their tents or lodgings; to see what is wanting; to pay them well; to see that they keep themselves neat and clean, and their arms bright. He has power in his own company of making serjeants and corporals. In the horse and foot-guards, the captains have the rank of colonels.

A *Captain-lieutenant*, is he who with the rank of captain, but with the pay of lieutenant, commands a troop or company, in the name and place of some other person, who is dispensed with on account of his quality from performing the functions of his post. Thus the colonel being usually the captain of the first company of his regiment, that company is commanded by his deputy under the title of captain-lieutenant.

The captain is to his company what the colonel is to the whole regiment. He has the entire charge and command of it in every particular that regards its discipline and economy.

A captain's usual command on guard, or detachment, is from 50 to 100 men, and he has always two subalterns along with him.

The commissioned officers subordinate to the captain are the *lieutenants* and *ensigns*, who are commonly called the *subaltern officers*. These, though their rank is not the same, yet for the most part roll in duty together without distinction. Their ordinary duties are in garrison, guards, detachments, courts-martial, visiting the hospitals and barracks, fatigues or working parties, and orderly duties. No officer can exchange his duty with another, unless by permission of the commanding officer. The ensign bears the colours, and has the charge of them in battle; and if

he be killed the captain takes them in his stead. The ensign is under the lieutenant, and in his absence supplies his post.

ADJUTANT, is an officer whose business it is to assist the major. Each battalion of foot and regiment of horse has an adjutant, who receives the orders every night from the brigade-major, which, after carrying them to the colonel, he delivers them out to the serjeants. When detachments are to be made, he gives the number to be furnished by each company or troop, and assigns the hour and place of rendezvous. He also places the guards, receives and distributes the ammunition to the companies, &c. and, by the major's orders, regulates the prices of bread, beer, and other provisions. The word is sometimes used by the French for an *aid-du-camp*.

Adjutant is to the commanding officer of a regiment, what an *aid-du-camp* is to a general, and a major of brigade to a brigadier. He likewise bears the same relation to a regiment as an adjutant-general does to an army.

QUARTER-MASTER is the next staff officer to an adjutant. His employment is rather of a civil than a military nature, he having nothing to do with the discipline of a regiment. His care is in providing and inspecting their quarters.

The SURGEON is another commissioned officer on the staff of a regiment. He should not only be well skilled in the branch of surgery, but should also be a good physician and apothecary, being obliged to act in these three capacities towards the sick and wounded. He is allowed a mate to assist him, who has no commission, but acts by virtue of a warrant from the colonel. Before any person can be appointed surgeon or mate to a regiment, he must pass an examination for each degree, before the board of surgeons.

The CHAPLAIN is the last commissioned officer on the staff. His office is too well known to require an explanation. He is generally allowed to act by deputy, when he thinks proper.

The SERJEANT-MAJOR is the *first*, and, properly speaking the *only non-commissioned* officer on the staff. He bears the same subordinate relation to the adjutant, as the adjutant does to the commanding officer; and as the adjutant keeps the roster of the officers, so does the serjeant-major keep that of the serjeants and corporals, whom he warns for duty in their turns, and orders the *quota* of private men each company is to furnish. The serjeant-major attends all parades of the regiment, to see if the exact number of men are there, and that they are clean and well-dressed. He is to make the other serjeants and corporals responsible for neglect in any of those particulars. When the rolls are called he assembles the serjeants of each company in front or rear of the regiment, in order to receive their reports, and deliver them to the adjutant. He must be well acquainted with the exercise and

manœuvres, in which it is frequently his business to instruct the young officers. He must be well versed in regimental duty in general, and in his own in particular, and must have a thorough knowledge of every part of the subject. On the vacancy of an adjutant or quarter-master, the serjeant-major, if he has merit, is commonly recommended for the succession.

The non-commissioned officers are the serjeants and corporals, and upon a proper choice of these officers the discipline of the company principally depends; for it is more immediately their business to form the soldiers; and from their continual intercourse with them they have it in their power to attend to matters which cannot so well come under the notice of the others.

The serjeants, being the nerves and sinews of a corps, a commanding officer must, in promoting private soldiers to the knot, have principally in view the training up and forming proper characters for the halbert.

A serjeant's command is from twelve to eighteen, with a corporal; and that of a corporal from three to nine privates. No non-commissioned officer can change his duty without leave of the serjeant-major, or the adjutant, as well as the commanding officer of his company.

When under arms, or drawn up in rank, the corporals are not to assume any command, or give directions, but must attend to the word of command like the private men. He should be more expert and graceful in handling his arms, as he is to serve as a model to the young soldiers.

The **DRUM-MAJOR** has the command of all the drum-men, and warns them in their turns for their different duties at roll-calling and all their parades; he is to be answerable for the good appearance of the drummers, and is to report such as are absent without leave to the adjutant or serjeant-major. He is likewise to see that the drums are kept in repair. In action the drum-major puts himself in the rear of the battalion, with all the drummers, except the orderly, to assist the wounded. Whenever the colours are taken out or returned, it is his place to uncase or put them up again in a proper manner. All corporal punishments being inflicted by the drummers of the regiment, the drum-major is always to provide the proper instruments, and is to attend and oblige the drummers to do their duty.

PRIVATE SOLDIERS have sometimes, but not often, obtained considerable rank in the army. The generals *Salter* and *Bland* were instances of this. An industrious and well-behaved man may, by the favour of his colonel, be in time appointed a serjeant, and the men that are clever in this, are in the way for greater promotion.

The word **SOLDIER** is applicable to him who takes *pay*. The *vassal* is he who is *obliged* to serve at his own *expences*. The *volunteer*, he who serves at his *own expences* and of his *own accord*.

There is a provision for *disabled soldiers*; and when a soldier has served twenty years he is entitled to be an out-pensioner of Chelsea hospital, from which he receives about seven pounds a year, and can set up his trade in any part of the kingdom. He may, if wounded and unable to get his living, be taken into the hospital, and be maintained for life.

Sometimes a regiment is reduced, in which case the men are disbanded or discharged, and the officers receive *half-pay* for their lives.

The HORSE-GUARDS have better pay than the dragoons; a colonel of dragoons has 2*l.* 1*s.* per day; a lieutenant-colonel 1*l.* 9*s.* 6*d*; a major 1*l.* 7*s.* 0*d.*; each captain of a troop 1*l.* 1*s.*; a lieutenant 18*s.*; a cornet 14*s.*; the adjutant 10*s.*; surgeon 12*s.*; chaplain 10*s.* 6*d.*; the drummer 2*s.* 3*d.*; the trumpeter 2*s.* 8¼*d.*; serjeant 2*s.* 9*d.*; a corporal 2*s.* 3*d.*; and each private man 1*s.* 8*d.* The colonel has the clothing of his regiment, for which he is allowed sufficient to clear 5 or 600*l.* a year, after paying for the clothes; and a captain of a troop has also some perquisites. The colonels of the two troops of life-guards attend the king at court, on court-days, and their regiments are not worth less to each, all things considered, than 2000*l.* a year.

A regiment of dragoons is considered worth 1500*l.* a year, and a regiment of foot, 1000*l.* a year in time of war, and about 700*l.* in time of peace. The reason is, because a regiment in time of war consists of 1000 men, and in time of peace of not above half the number; of course, if a colonel gets 600*l.* a year, by clothing 1000 men, he can get but half the money by clothing 500.

In time of peace there are about 72 regiments. In war about 120 regiments, consisting of 1000 men each; so that in war, reckoning 120 regiments of 1000 men each, is 120,000, and 9000 guards; but in time of peace the 120 regiments are reduced to about 72 of 500 each, that is, about 36,000 men.

The *Foot-Guards* have better pay than marching regiments: they continue in London, which is a more expensive place than the country, where other regiments are quartered, and where, owing to being quartered or lodged at public-houses, the officers can live cheaper; besides, the uniform or clothes of the officers of the foot-guards is more expensive than those of a marching regiment. The officers of the foot guards have also better or more rank than officers of other regiments. An ensign of the guards ranks or is upon an equality with a lieutenant of a marching regiment; a lieutenant of the guards ranks as a captain; and a captain of the guards as a lieutenant-colonel, and is called colonel.

The colonel of a marching regiment has 1*l.* 2*s.* 6*d.* per day; the lieut. colonel 15*s.* 11*d.*; major 14*s.* 1*d.*; each of the captains 9*s.* 5*d.*; a lieutenant 5*s.* 8*d.*; an ensign 4*s.* 8*d.*; the adjutant 8*s.*; the quarter-master 5*s.* 8*d.* and 4*d.* a month out of each man's pay; the surgeon 11*s.* 4*d.*; assistant surgeon 7*s.* 6*d.* and the

chaplain 6*s.* 8*d.*; a serjeant 2*s.* 3*d.*; a corporal 1*s.* 2¼*d.*; and each private man 1*s.*

DRAGOONS, in war, are an order of soldiery who march on horseback: they fight both on foot and on horseback. Dragoons are usually posted in front of the camp, and march first to the charge. They are divided into brigades, as the cavalry, and each regiment into troops; each troop having a captain, lieutenant, cornet, quarter-master, two serjeants, three corporals, and two drums. Dragoons are very useful where dispatch is requisite, for they keep pace with the cavalry, and do the duty of infantry.

CAVALRY, a body of soldiers, that charge on horseback, from the French *cavalerie*, and that from the corrupt Latin *caballus*, a horse. The Roman cavalry consisted wholly of those called equites, or knights, who were a distinct order of citizens. The Grecian cavalry were divided into heavy and light armed. The Thessalians excelled the rest of the Greeks in their cavalry.

The chief use of cavalry is to make frequent excursions to disturb the enemy, and also to insure the retreat of the foot. Formerly the manner of fighting of the cavalry was, after firing their carbines, to wheel off, to give opportunity for their loading again. *Gustavus Adolphus* is said to have first taught the cavalry to charge through, to march straight to the enemy, with the sword drawn in the bridle hand; and each man having fired his piece at a proper distance, to betake himself to his sword, and charge the enemy as was found most advantageous.

There are two troops of horse-guards, or, as they are also called, life-guards, because they attend the king and protect his person; there are also two troops of horse grenadier-guards, one regiment of horse-guards, four regiments of horse, three regiments of dragoon-guards, and 18 regiments of dragoons, making in all about 26 regiments, or about 18,000 men.

SQUADRON, from the Italian *squadrone*, of the Latin *squadro*, used by corruption for *quadro*, because at first squadrons were always square. A squadron of horse is commonly from one to two hundred. It usually consists of three troops of fifty men each. It is always drawn up three deep, or in three ranks.

LIGHT-HORSE, includes all the horse except those of the life-guards. The term is sometimes applied to an independent troop, or a troop not embodied into a regiment. The denomination arose hence, that anciently they were lightly armed in comparison of the royal guards.

FUSILEERS are foot-soldiers armed with fire-locks, which are generally slung. There is a regiment of fusileers for the guard of the artillery. The word is formed from the French *fusil*, a fusee, a firelock.

GRENADIERS form one company of every regiment, and

march at the head of that regiment: they are the tallest, and best-made men, picked out of the whole, and wear high caps on purpose to make them appear taller, in order to give the regiment a more noble appearance.

JANISARIES, an order of infantry in the Turkish armies, and reputed the grand seignior's foot guards. *Vigenere* tells us that the discipline observed among them is extremely conformable, in a great many things, to that used in the Roman legions.

HUZZARS, or Hussars, a kind of soldiery first used in Poland and Hungary, commonly opposed to the Ottoman cavalry. They were horsemen clothed in tigers' and other skins, and set out with plumes of feathers; their arms are the sabre and bayonet. They are very resolute, and better in a hasty expedition than in a set battle.

ARTILLERY COMPANY, a band of infantry of 600 men, making part of the militia or city guard of London.

By *Infantry* is meant a body of foot-soldiers.

TROOP, a small body of horse or dragoons, usually about fifty, commanded by a captain, answering to a company of foot.

A COMPANY, denotes a light body of infantry, commanded by a captain. The number is uncertain, commonly fifty sentinels, three serjeants, three corporals, and two drums. In the guards a company is 80 private men. What are called *independent companies* are not embodied into regiments.

BRIGADE, from the Latin *briga*, a brigue; or else, from brigand, an ill-disciplined soldier. The French describe two kinds of brigades. 1st, A brigade of an army, which is a body of horse of ten or twelve squadrons; or of foot of five or six battalions. 2d, A brigade of a troop of guards, which is a third part thereof; but if the troop consists of 100, then only a sixth.

BATTALION, from *batualia*, or *battalia*, or *battel*, implies a light body of infantry, ranged in form of battle, and ready to engage. A battalion has from five to eight hundred men, of which one-third were formerly pikes in the middle, and the other two-thirds musquets posted on the wings.

MILITIA, in its restrained sense, signifies the inhabitants, or, as we call them, the trained bands of a town or country, who arm themselves, on a short warning, for their own defence. *Militia* in this sense is opposed to regular stated forces.

The Militia are a distinct body of men, though they are disciplined like the army, and co-operate with them in time of war.

Every county is obliged to raise a certain number out of the inhabitants of that county, and the men so raised are trained to arms, and serve five years, when others are drawn by lot to serve in their room.

They are under arms only in time of war, at which time they

are clothed and paid like other soldiers, and under the same discipline; but in time of peace they are called out for one month in the summer, and are taught their exercise, or the use of arms, and during the month only that they are so out they are paid.

Each parish chooses yearly, by lot, a proportionable number of their inhabitants, perhaps three or four, or more, sufficient to make up the number their county is to furnish. If any of these inhabitants object to serve, by paying a certain sum a substitute may be found to serve the five years for them.

The officers are appointed by the lord lieutenant of the county, out of the gentlemen of the county; the lord-lieutenant being always the colonel of the county militia.

As the militia are never sent out of the kingdom, gentlemen are very eager for these appointments; so that none are chosen, but such as have a certain independent property; which is called a qualification.

Lieutenant-colonels must have an estate of 600*l.* a year, the majors and captains 200*l.* lieutenants 50*l.* and ensigns 20*l.* one-half of which property must be in the county they are chosen for.

Wounded militiamen are, like other soldiers, entitled to the benefit of Chelsea-hospital, and have other privileges like them.

All the army together are not less in the time of war, reckoning the cavalry, infantry, militia, marines, and artillery, than about 184,000, besides 120,000 seamen; so that, without officers, the army and navy may be reckoned, in war, to amount to above 300,000 men. A vast number for so small a territory as Great Britain to support.

REGIMENT, a body consisting of several troops of horse, or companies of foot, commanded by a colonel and major. The number of men in a regiment is as undetermined as that of the men in a troop or company. Some regiments of horse are not above 300 men. Before the year 1637, it is said there were no regiments of horse, the troops at that time not being incorporated into a body.

Generals have no pay but when employed; but admirals are always in pay.—The daily full pay of Generals and their Staff Officers is as follows: Field Marshal 8*l.* General 6*l.* Lieutenant-General 4*l.* Major-General 2*l.* Brigadier-General 1*l.* 10*s.* Assistant Adjutant-General 15*s.* Assistant Quarter-Master-General 10*s.* Brigade-Major 10*s.* Aid-de-camp 10*s.*

In time of war, a young gentleman, who perhaps cannot get an ensigncy for asking for, and has not 350*l.* to purchase one, will request the colonel of a regiment in service to take him as a volunteer; if accepted, he acts in the station of a private soldier, at his own expence, without pay, but yet associates with the officers; and such volunteer will have the first ensigncy in the regiment

that drops, given to him, as a reward for his alacrity and readiness to serve his country.

The widows of officers have pensions after their death, whether they are killed in battle or not. A colonel's widow has 50*l.* a year; a lieutenant colonel's 35*l.* a major's, 30*l.* a captain's, 25*l.* a lieutenant's, 20*l.* an ensign's, 15*l.* and a chaplain's and surgeon's, 20*l.* each.

The Corps of Engineers is a part of the artillery; their business is to contrive attacks at sieges, and defend towns when besieged. They have the sole construction and disposition of all forts, redoubts, batteries, mines, &c. the fortifying of camps and posts; reconnoitering the enemy's works, taking plans and surveys of a country, discovering the most advantageous methods for marching, retreating, attacking, or defending; building of all fortifications, magazines, and other military buildings; they ought, therefore, to be gentlemen of science.

ARTILLERY, in its general sense, denotes the offensive apparatus of war, particularly of the missile kind. Among the French, the term was antiently appropriated to Archery. In its modern acceptation, it signifies fire-arms, mounted on their carriages, and ready for action, with their balls, bombs, granades, &c. If we take the term in its more extensive meaning, it includes the powder, the matches, instruments for fire-works, the utensils of ordnance, the machines which facilitate their motion, the vehicles over which they traverse rivers, every thing necessary to them, and all that enter into the form of a train of artillery.

There is only one regiment of artillery, consisting of four battalions, whose province it is to work mortars, great guns, or cannons, spring mines, throw bridges over rivers, and other such things.

The *Men destined for the service of artillery,* are the cannoneers, the bombadiers of every rank, and engineers of every kind, are understood by this term.

By *artillery* is likewise understood the science which the officers of artillery ought to possess: as the properties of gunpowder, the construction of warlike machines, and the management of the whole in the field.

OF THE NAVY.

LORD HIGH ADMIRAL OF ENGLAND, is an officer of great trust, in some ancient records called *capitanus maritimarum.* This great officer has the management of all maritime affairs, and the government of the royal navy, with power of decision in all maritime cases, both civil and criminal. The duties of his office are, however, generally entrusted to a Commission, called THE LORDS OF THE ADMIRALTY.

ADMIRAL, a great officer or magistrate, who has the government of a navy, and the hearing of all maritime causes. Though there is some doubt as to the origin of this officer, the most probable opinion is that of sir *Henry Spelman*, who thinks that both the name and dignity were derived from the Saracens, and by reason of the holy wars brought amongst us; for admiral in the Arabian language, signifies a prince or chief ruler. *Du Cange* says, that the Sicilians were the first, and the Genoese the next, who gave the denomination of admiral to the commanders of their naval armaments. Some think it was introduced amongst us in the reign of Edward I. or, according to others, of Henry III. Before the use of the word admiral was known, the title of *custos maris* was made use of.

VICE ADMIRAL is one of the three principal officers of the royal navy, who commands the second squadron, and has his flag set up in the foretop of his ship.

CAPTAIN OF A SHIP OF WAR, the officer who commands a ship of the line of battle, or a frigate carrying twenty or more cannon. The charge of a captain in His Majesty's navy is very comprehensive, as he is not only answerable for any bad conduct in the military government and equipment of the ship he commands, but also for any neglect of duty, or ill management in his inferior officers, whose several charges he is appointed to superintend and regulate.

Captain of a Ship, either of a man of war or of a trading vessel, is the commanding officer. In a merchant's ship, the officer to whom the direction is committed is sometimes called *master*, and in the Mediterranean the master is frequently called *patron*.

PILOT, from *prorita*, he who governs the prow or head, or from the old French, *pile*, ship, as some suppose. A person who conducts a ship into a road, harbour, or through intricate channels. He is the second person in the ship. There are two kinds, one an officer who takes altitudes at sea, uses the quadrant, and watches the compass. The other is a *coasting pilot*, and is occasionally called in on coasts and shores unknown to the master.

CORPORAL of a ship, an officer who sees that the soldiers and sailors keep their arms neat and clean, and teaches them the use of arms. He has a mate under him. Corporals have the charge of setting the watch and sentries, and of relieving them.

MIDSHIPMAN, is appointed by the captain of a ship of war, to second the orders of the superior officers, and assist in the necessary business of the vessel, either aboard, or ashore. A first-rate man of war has 24 midshipmen, and the inferior rates a suitable number in proportion. No person can be appointed lieutenant, without having served two years in the royal navy in this capacity, or in that of mate, besides having been at least four years in actual service at sea, either in merchant ships, or in the royal navy.

Midshipman is accordingly the station in which a young volunteer is trained for a sea officer. He will herein pass through the several exercises necessary to attain a sufficient knowledge of the machinery, movements, and military operations, of a ship.

A midshipman is a sort of naval cadet. *Cadet* is a term naturalized in our language from the French. It denotes a young gentleman-soldier, who, to attain some knowledge in the art of war, and in expectation of preferment, chooses to carry arms as a private man.

The STEWARD receives all the victuals from the purser, sees it well stowed in the hold : all things belonging to the ship's use are in his custody ; he looks after the bread, and distributes out the several messes of victuals in the ship.

PURSER, is an officer on board a man of war, who receives her victuals from the victualler, and is to take care that it be in good condition, and well laid up. He also keeps a list of the men and boys belonging to the ship, and sets down exactly the day of each man's admittance into pay, that the paymaster or treasurer of the navy may issue out his disbursements, and pay off the men according to the purser's book.

The VICTUALLER is he who furnishes the ship with victuals or provisions.

For furnishing his majesty's navy with victuals, there is a victualling office in London, which is managed by seven commissioners, who have their inferior officers or secretaries, clerks, &c. besides agents in different parts of the kingdom.

CLERK of a merchant's ship is an officer appointed to take care that nothing be squandered needlessly : he is obliged to keep a journal and an inventory of every thing in the loading of the vessel ; as the rigging, apparel, arms, provision, merchandises, the names of the passengers, the freight agreed on, a list of the crew, their age, wages, &c. The bargains, purchases, and sales, the ship makes from its departure ; the consumption of provision, and in short every thing relating to the expence of the voyage. In small vessels the master or pilot does the office of clerk.

MARINES have nothing to do in working the ship, their duty is merely to defend it in war, and attack the enemy when fighting. There is generally a company on board each ship, about forty in number, under a captain and two lieutenants. And there are seventy companies of marines in the whole. In a sea-fight their small arms are of very great advantage in scouring the decks of the enemy, and when they have been long enough at sea, to stand firm when the ship rocks, they must be infinitely preferable to seamen, if the enemy attempt to board, by raising a battalion with their fixed bayonets to oppose them.

Of *Lieutenant* and *Surgeon*, what has been said under a former head will be sufficient.—*Mate*, the second in subordination, as the master's mate.

OFFICERS of the Navy are, the *treasurer*, who receives monies out of the exchequer, to pay all the charges of the navy. The *controller*, who attends and controls all payments of wages, knows all the rates of stores, and examines and audits all accounts. The *surveyor* knows the state of all stores, sees all wants supplied, estimates repairs, &c. and at the end of each voyage, audits and states all accounts. The *clerk of the acts* records all orders, contracts, bills, warrants, &c. There are also several commissioners of the navy.

NAVY-BILLS, or victualling-bills, are bills or orders for the payment of money, issued by the commissioners of the navy on the treasury of the navy, for stores purchased at a certain rate per cent. after six months from the date of their being registered at the respective offices; and they have generally been paid off within 18 months or two years from the time of their being issued.

The privileges conferred on sailors are much the same as on soldiers, with regard to relief, when maimed, wounded, or superannuated. The Greenwich hospital receives such seamen as are disabled from further service, and provides for the widows and children of such as are slain. The hospital is supported by government, and by 6*d*. a month out of every seaman's wages.

No seaman on board his majesty's ships can be arrested for any debt, unless the same be sworn to amount to at least twenty pounds, though a soldier may be arrested for a debt which extends to half the sum.

The following is the pay of the principal Officers of the Navy: Admiral, and Commander-in-Chief of the Fleet, per day, on full pay, 5*l*. on half pay, 3*l*. Admiral, 3*l*. 10*s*.—2*l*. Vice Admiral, 2*l*. 10*s*.—1*l*. 10*s*. Rear-Admiral, 1*l*. 15*s*.—1*l*. 2*s*. 6*d*. Secretary of Admiral of the Fleet, 500*l*. per ann. In first-rate Ships, a Captain's daily full pay is 1*l*.; a Master's, 12*l*. 12*s*. per month; a Lieutenant, 5*s*. 6*d*. per day; a Sub-Lieutenant's, 4*s*. per day; a Midshipman's, 2*l*. 10*s*. 6*d*. per month; and a common Sailor's, 1*l*. 8*s*. per month, or 1*s*. per day.

SHIPS, VESSELS, &c.

NAVY. The fleet or shipping of a prince or state. Fleet implies a number of vessels, going in company, whether on a design of war or commerce.

SHIP is a general name for all great vessels with sails, fit for navigating the sea, excepting galleys, which go with oars and smack sails. The invention of ships is very ancient, but the time uncertain. Some look on *Noah* as the first ship-builder. Ships are usually divided into three classes—ships of war, merchants' ships, and an intermediate kind, half war, half merchant; being such as, though built for merchandise, yet take commissions for war. Ships of war are again divided into several orders, called rates.

MERCHANTS' SHIPS are estimated by their burthen, that is, by the number of tons they bear, each ton reckoned 20 cwt. The estimate is made by gauging the hold, which is the proper place of loading.

VESSEL is a name common for all sorts of shipping. High-bottomed or decked vessels are those that move only with wind and sail, and live in all seas, as pinks, galleons, ships, &c. Flat-bottomed vessels go both by oars and sails.

Vessels of war, are a three-decked ship, first and second rate; a frigate or two-decked ship, third, fourth, and fifth rate; a one-decked ship, sixth-rate; a bomb-vessel, a fire-ship, a ketch, a machine-vessel, a smoaker.

A vessel is said to draw ten or fifteen feet of water, when it sinks so deep under water, being loaded. A vessel is said to be of three or four hundred tons, when it will carry that weight, or when immerged in water it passes the space of three or four hundred tons of water.

The shape and figure of vessels is of great importance to their motion and sailing.

A MAN OF WAR, first-rate, has its gun-deck from 159 to 174 feet in length; and from 44 to 50 feet broad; contains from 1313 to 1882 tons; has from 700 to 800 men; and carries from 96 to 110 guns.

A FRIGATE is a two-decked ship, of the third, fourth, and fifth-rate. Third-rates have their gun-decks from 153 to 165 feet long; and from 37 to 40 broad; they contain from 871 to 1262 tons, carry from 389 to 476 men; and from 36 to 44 guns.

The other rates are proportionably less. The sixth rates have their gun-decks from 87 to 95 feet long, and from 22 to 25 feet broad; they contain from 152 to 256 tons; carry from 50 to 110 men, and from 16 to 24 guns.

New-built ships are much larger and better than the old ones, of the same rate; whence in the double numbers, the larger express the proportions of the new-built ships; the less, those of the old ones.

YATCHT, or Yatch, from the Dutch *Iatch*, signifying hunting, a kind of vessel commodiously contrived and adorned, to suit it to state passengers, &c. It is furnished with masts and sails, has one deck, carrying from 4 to 12 guns, with from 20 to 40 men; burthen from 30 to 160 tons. They are used for running, and making short trips. The Dutch yatchts are chiefly used on their rivers and canals.

BRIGANTINE, a small flat open vessel, goes with sails and oars; and is either for fighting or giving chase. Brigantines are principally used by the *Corsairs*, all the hands on board being soldiers, and each having his musquet ready under his oar.—There are usually 12 or 15 benches on a side for the rowers, a man and an oar to each bench. *Corsairs* are pirates, particularly

in the Mediterranean, who plunder merchants' vessels without commission from any prince. A farther description is given by a different author, as follows:

BRIG, or Brigantine, a merchant's ship with two masts.—This term is not universally confined to vessels of a particular construction, or which are masted and rigged in a manner different to all others. It is variously applied by the mariners of different European nations, to a peculiar sort of vessel of their own marine.

Among British seamen this vessel is distinguished by having her main-sails set nearly in the plane of her keel; whereas the main-sail of larger ships are hung athwart, &c.

SLOOPS, or shallops, are tenders on the men of war, about 60 tons, and carry about 30 men. They are light small vessels, with only a small main-mast, foremast, and lug-sails to hale up, and let down, on occasion. They are commonly good sailers.

FIRE-SHIPS are filled with artificial fire-works, and sent in amongst the enemy's ships.

A BILANDER is seldom above 24 tons, and can lie near the wind.

CUTTER, a small vessel commonly navigated on the English Channel, furnished with one mast, and rigged as a sloop. Many of these are used in an illicit trade.

HULKS are large vessels, having their gun-decks from 113 to 150 feet long, and from 30 to 40 feet broad: they will carry from 400 to 500 tons.

A HULK is an old ship cut down to the gun-deck, and fitted with a large wheel for careening.

HOY, a small vessel or bark, whose yards are not across, nor the sails square, like those of ships, but the sails like a mizen, so that she can sail nearer the wind than a vessel with cross sails can do.

BOMB-VESSELS have sometimes three masts, and square sails, but also often ketch fashion, with one mast and mizen.

BOMB-KETCH is for the use of mortars at sea; it is a small vessel strengthened with large beams.

SMACKS are small vessels with but one mast; sometimes they are employed as tenders on a man of war, and are also used for fishing upon the coasts.

CARTEL, an agreement between two states for the exchange of their prisoners of war. Cartel-ship, is one commissioned in time of war to exchange the prisoners of any two hostile powers, &c. The officer who commands her carries no cargo, ammunition, or implements of war, except a single gun for firing signals.

GALLEY is a low-built vessel, going with oars and sails, chiefly used by the states bordering on the Mediterranean. Galleys have usually 25 or 30 benches of oars on each side, and four or five galley-slaves to each bench. The galley carries a large gun, two bastard pieces, and two small pieces. It is usually from 20 to 22 fathoms long, three broad, and one deep, and has two masts, viz.

a main-mast, and a fore-mast, which may be struck or lowered at pleasure.

CONVOY signifies one or more vessels of war, appointed to conduct a fleet of merchant ships, serving as a watch and shelter from the insults of enemies; though sometimes by a convoy is implied a fleet of merchant ships bound to any particular part or place of rendezvous.

SQUADRON of ships, a division or part of a fleet, commanded by a commodore, or by a rear or vice-admiral. The number that forms a squadron is not fixed. A small number in a body and under one commander may make a squadron. If the ships are numerous they are sometimes divided into three squadrons, and each squadron may be again divided into three divisions.

PRIVATEERS are a kind of private men of war, the persons concerned wherein administer at their own cost a part of the war, by fitting out these ships of force, and providing them with all military stores; and instead of pay they have leave to keep what they take from the enemy, allowing the admiral his share. Besides these private commissions, there are special commissions for privateers granted to commanders of ships, who take pay, who are under a marine discipline; and if they do not obey their orders may be punished with death. Ships taken by privateers were to be divided into five parts; four parts whereof to go to the persons interested in the privateer, and the fifth to his majesty; and as a farther encouragement, privateers destroying any French man of war, or privateer, shall receive 10*l.* for every piece of ordnance in the ship or vessel so taken. By a particular statute, the commissioners of the admiralty may grant commissions to commanders of privateers, for taking ships, &c. which being adjudged a prize, a tenth part is paid to the admiral.

BARGE, a kind of state or pleasure boat, or for the purpose of merchandise, used chiefly in the navigation of rivers. Barges have various names, according to their particular use; as, a company's barge; a royal barge; a Severn trow; a Ware barge; a West-country barge.

CANOE, a vessel or boat used among the Indians, made of the trunk of a tree hollowed; or several pieces of the bark put together. The small canoes are very narrow, have room for one person only in breadth, and seven or eight lengthwise. The largest are made of a short silk-grass, or rushes. But now commonly the canoes are rowed with paddles, differently formed and managed to ours. The rowers, who are generally American savages, are very expert in managing and balancing their canoes. When they come near a water-fall, or when they want to cross overland from one river to another, they carry their canoes on their heads.

The inhabitants of Greenland, Otaheite, Hudson's Bay, &c. have canoes larger and very different from the above.

USEFUL MEDICINAL RECEIPTS

For an Ague.—Take a handful of groundsel, shred it small, put it into a paper bag, four inches square, pricking that side which is to be next the skin full of holes. Cover this with a thin linen, and wear it on the pit of the stomach, renewing it two or three hours before the fit. Or, melt two penny-worth of frankincense, spread it on linen, grate a nutmeg upon it, cover it with linen, and hang this bag on the pit of the stomach, which seldom fails to effect a cure. A tea-spoonful of spirits of hartshorn, taken in a glass of water, has often been attended with success. Or, apply to the wrists a plaister of turpentine; or of bruised pepper mixed with treacle. The following is an easy and almost instantaneous cure of this troublesome complaint; it has cured many persons, after more celebrated preparations have proved unsuccessful. The recipe is; When the fit is on, take a new laid egg, in a glass of brandy, and go to bed immediately.

St. Anthony's Fire.—Keep the bowels open by gentle physic; let the diet be low, and the drink barley-water. If the head be disordered, steep the feet in warm water. Fine oatmeal may be sprinkled over the parts, for the purpose of absorbing the discharge; but in case of much heat and dryness, cabbage-leaves (stripped of the stems) softened before the fire, or by immersion in boiling water, will answer best.

The Apoplexy.—In the fit, put a handful of salt into a pint of cold water, and, if possible, pour it down the throat of the patient; he will quickly come to himself: so will one who seems dead by a fall. But send for a good physician immediately. If the fit be soon after a meal, do not bleed, but vomit. Rub the head, feet, and hands, strongly, and let two strong men carry the patient upright, backward and forward about the room.

To prevent Abortion.—In the case of a weak or relaxed habit, take daily half a pint of decoction of lignum guaiacum; boiling an ounce of it in a quart of water for five minutes; observing at the same time to avoid great quantities of tea or other weak liquors, and to use solid food. But for a woman of a full habit give half a drachm of powdered nitre, in a cup of water-gruel, every five or six hours, using withal a spare diet, chiefly of the vegetable kind. In both cases the patient should sleep on a hard matrass, with her head low, and be kept cool and quiet.

The Asthma.—Cut an ounce of stick liquorice into slices: steep this in a quart of water four and twenty hours, and use it, when you are worse than usual, as common drink, which has been known to give much ease.

A Dry or Conclusive Asthma.—Drink a pint of new milk morning and evening: this has cured an inveterate asthma. Or, beat fine saffron small, and take eight or ten grains every night. Or,

you may take two or three grains of ipecacuanha every morning; or from five to ten grains every other evening: Do this, if needful, for a month or six weeks: Five grains sometimes vomit. In a violent fit, take twenty grains instantly. In any asthma, the best drink is apple-water; that is, boiling water poured on sliced apples.

To prevent Bleeding at the Nose.—Drink whey largely every morning, and eat plentifully of raisins; or wash the temples, nose, and neck with vinegar.

Bleeding of a Wound.—Take ripe puff-balls; break them carefully, and save the powder: strew this on the wound, and bind it on. This will stop the bleeding of an amputated limb without any cautery.

Spitting Blood.—Take a tea-cupful of stewed prunes, at lying down, for two or three nights. Or, two spoonfuls of juice of nettles, every morning, and a large cup of decoction of nettles, at night, for a week.

Vomiting Blood.—Take two spoonfuls of nettle-juice. This also dissolves blood coagulated in the stomach.

Biles.—Apply a little Venice turpentine; or an equal quantity of soap and brown sugar well mixed.

Hard Breasts.—Apply turnips roasted till soft, then mashed and mixed with a little oil of roses: Change this twice a day, keeping the breast very warm with flannel.

Sore Breasts and Swelled.—Boil a handful of Chamomile and as much mallows in milk and water: Foment with it between two flannels as hot as can be borne, every twelve hours: It also dissolves any knot or swelling in any part.

A Bruise.—Immediately apply treacle spread on brown paper; or, rub the part with Opodeldoc.

A Burn or Scald.—Immediate plunge the part into cold water: Keep it in an hour, if not well before; perhaps four or five hours. Or, apply a bruised onion. Spirit of turpentine is a noble remedy.

In a deep Burn or Scald.—Mix lime-water and sweet oil, to the thickness of cream; apply it with a feather several times a day: This is a very effectual application.

A Cancer in the Breast, of 13 years standing, has been cured by frequently applying red-poppy-water, plantain, and rose-water mixed with honey of roses: Afterwards, the waters alone perfect the cure. An excellent application is a plaster composed of mercury and a vegetable anodyne, spread on soft leather, according to the following form:—Take of strong mercurial ointment, gum ammoniac, and extract of hemlock, of each equal parts. The gum ammoniac to be reduced to a fine pulp by means of a little water, and afterwards the whole to be blended in a marble mortar. Over this plaster a dried hareskin should be worn.

A Cancer in any other Part.—Apply red onions, bruised.

For a Cancer in the Mouth.—Boil a few leaves of succory, plantain, and rue, with a spoonful of honey, for a quarter of an hour: Gargle with this often in an hour: Or, with vinegar and honey, wherein half an ounce of roche-allum is boiled.

To cure Chilblains.—Apply a poultice of roasted onions hot: Keep it on two or three days, if not cured sooner.

Chin-Cough; or, Hooping-Cough.—Take a scruple of salt of tartar, ten grains of cochineal finely powdered, pour on it half a gill of boiling water, let it stand till cold. Give an infant one tea-spoonful morning and evening, with a little sugar; give the child a little decoction of pearl barley after it, and rub the back at lying down, with old rum and spirits of turpentine; it seldom fails.

Cholera Morbus, or Flux and Vomiting.—Drink two or three quarts of cold water, if strong; of warm water, if weak. Or decoction of mint, or rice, or barley, or toasted oaten bread.

In a fit of the Colic.—Drink a quart of warm water. Or, apply outwardly a bag of hot oats; or steep the legs in hot water a quarter of an hour.

For a Consumption.—Take no food but new butter-milk churned in a bottle, and white bread. Or, boil two handfuls of sorrel in a pint of whey; strain it, and drink a glass thrice a day. Or, turn a pint of skimmed milk with half a pint of small beer; boil in this whey about twenty ivy leaves, and two or three sprigs of hyssop; drink half over night, and the rest in the morning: do this, if needful, for two months daily—it has cured in desperate cases.

Convulsions in Children.—Scrape piony roots, fresh digged; apply what you have scraped off to the soles of the feet.

For a Cough.—Drink a pint of cold water lying down in bed. Or, make a hole through a lemon, and fill it with honey; roast it, and catch the juice: take a tea-spoonful of this frequently.

To prevent the Cramp.—Tie your garters smooth and tight under your knee at going to bed, which seldom fails; or lay a roll of brimstone under your pillow.—*To cure the Cramp,* strongly put out your heel, pulling the toes inwards.

Deafness.—Be electrified through the ear; or use the cold-bath; or wash the head in cold water every morning.

A Diabetes.—Drink three or four times a day a quarter of a pint of alum-posset, putting three drachms of alum to four pints of milk. It seldom fails to cure in eight or ten days.

The Dropsy.—Rub the swelled part with salad oil by a warm hand, at least an hour a day: this has done wonders in some cases. Or, eat a crust of bread every morning fasting.

The Ear Ache.—Rub the ear hard for a quarter of an hour—or, put in a roasted fig, or onion, as hot as may be—or, blow the smoke of tobacco strongly into it.

Eyes diseased or inflamed.—Take of alum, purified, fifteen grains; dissolved in six ounces of elder-flower water. This is

a good astringent eye-water, and is much in use at Guy's Hospital in the latter stages of inflammation of the eye: Or, take of vitriolated zinc, five grains; distilled water, four ounces. Mix. This is also an excellent lotion for inflammation of the eyes; it is much in use at St. Bartholomew's Hospital: Or, take of Goulard's extract of lead, ten drops; white wine vinegar, two drachms; laudanum, thirty drops; distilled water, eight ounces. Mix. For inflammation of the eye, or eye-lids. To be frequently applied by means of folds of fine linen over the affected eye or eyes.

A Flux.—Boil the fat of a breast of mutton in a quart of water for an hour: drink the broth as soon as you can conveniently.

A Bloody Flux.—Take grated rhubarb, as much as lies on a shilling, with half as much grated nutmeg, in a glass of white-wine, at lying down every night.

The Gravel.—Infuse an ounce of wild parsley-seeds in a pint of white-wine for twelve days; drink a glass of it fasting, three months. To prevent its return, breakfast for three months on agrimony tea: this has cured the complaint without the least symptom of its return.

The Jaundice.—Take a small pill of Castile-soap every morning, for eight or ten days.

The Itch.—Take of flowers of sulphur, two ounces; hog's lard, four ounces; oil of lavender, sixty drops. Mix. To be well rubbed on the parts affected every night, till the eruption ceases to be troublesome. Or, take of white hellebore root, bruised, four ounces; boil in a quart of water to a pint and a half; then strain, and add lavender-water, four ounces; with which the parts affected should be washed two or three times a day.

The King's Evil.—Make a leaf of dried burdock into a pint of tea; take half a pint twice a day, for four months.

To cure the Piles.—Apply warm treacle—or, a tobacco-leaf steeped in water twenty-four hours; and take flour of brimstone, in treacle, or milk.

The Rheumatism.—Rub in warm treacle, and apply to the part brown-paper smeared therewith; change it in twelve hours.

To prevent or Cure Rickets.—Wash the child every morning in cold water.

A Scald Head.—Anoint it with tar ointment and calomel.

The Scurvy.—Use a decoction of burdock: boil three ounces of the dried root in two quarts of water to three pints; take half a pint daily.

For an inflamed Sore Throat.—Lay nitre and loaf-sugar, mixed, on the tongue.—*Putrid Sore Throat.*—Lay on the tongue a lump of sugar dipt in brandy.

Bloody Urine.—Take twice a day a pint of decoction of agrimony.

Worms.—Take two spoonfuls of brandy sweetened with loaf-sugar every morning.

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